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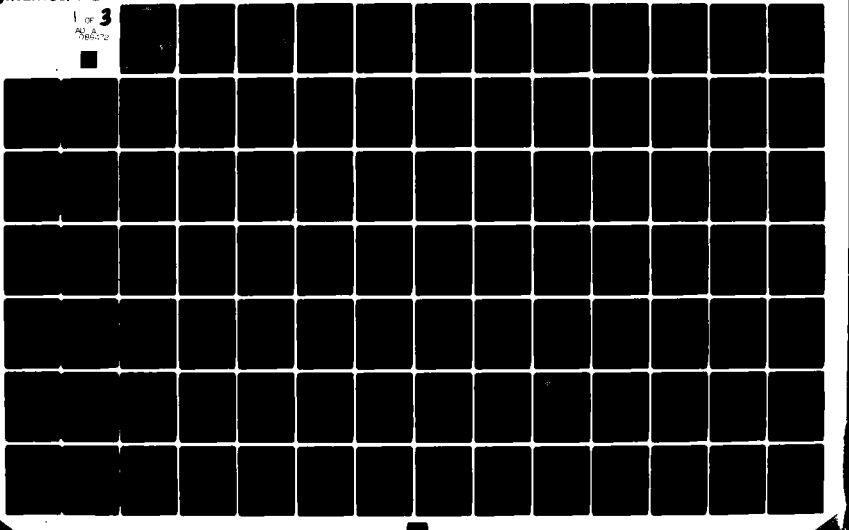

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The study defines the current (May 1980) structure of the Army with respect to automation and communications organization and functions. Using this baseline, the study reports on specific problem areas which impact on the organization. Army subjects covered are policy, procedures, acquisition and interaction processes.

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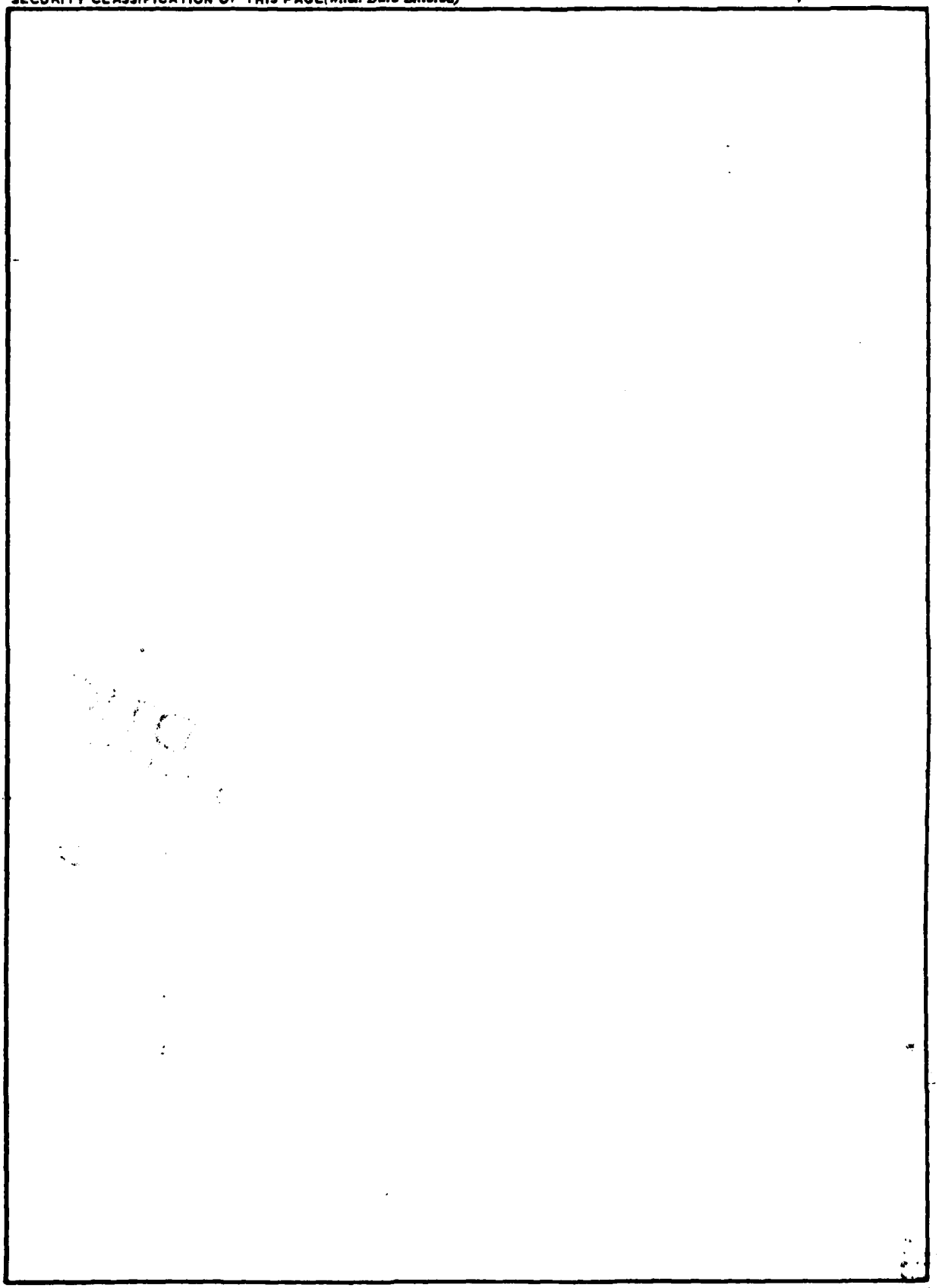

ALIGNMENT OF AUTOMATION AND COMMUNICATIONS FUNCTIONS OF ARMY AGENCIES AND COMMANDS

31 JUL 1980

DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT CHIEF OF STAFF
FOR AUTOMATION AND COMMUNICATIONS
WASHINGTON, D.C. 20310

DAAC-PE

31 JUL 1980

SUBJECT: Final Report, Study: Alignment of Automation and Communications Functions of Army Agenices and Commands (SAACFAAC)

This report presents the results and finding of the SAACFAAC Study. The report terminates with the completion of the group full-time effort in May 1980.

Subsequent to the events reported herein, a second meeting of the Study Advisory Group was held in June 1980. At this meeting, the contents of this report were briefed. As a result of SAG recommendations, the problems identified by the group were accepted as valid and action fora were recommended. Completion of actions to solve the identified problems will appear in subsequent formal Army publications or as published minutes of action conferences which will address certain of the identified problems.

The Department of the Army Office of Record for this report is, the Policy, Plans and Evaluation Directorate, Office of the Assistant Chief of Staff for Automation and Communications. Questions and recommendations relevent to the report should be addressed as follows:

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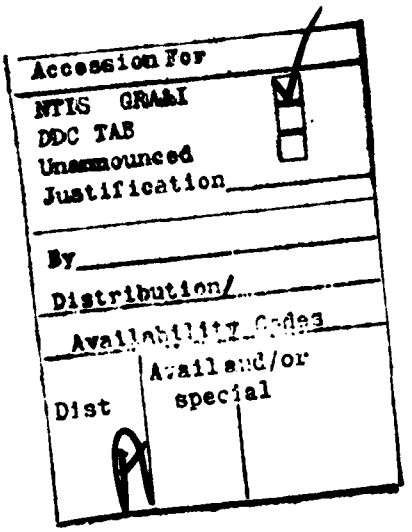

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Study Director

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APPENDICES

EXECUTIVE SUMMARY

Numerous studies, forums and investigations conducted within the Department of the Army suggested that the existing organization of automation and communications activities was less than optimal. Headquarters management of these two services was consolidated on the Army Staff in October 1978 with the creation of the position of the Assistant Chief of Staff for Automation and Communications (ACSAC). An initial task given to the ACSAC was the investigation of the postulated inefficiencies in organization. An internal ACSAC study (SOMAC) conducted in the 78-79 time frame concluded that organizational changes were appropriate, and recommended a blueprint for change.

This study was not favorably received within the Headquarters due to its in-house perspective. As a result of this, and other staff recommendations, the ACSAC sponsored an across the staff study into automation and communications organizational alignment. This study, formally chartered under the provisions of AR 5-5, was titled, "Study: Alignment of Automation and Communications Functions of Army Agencies and Commands". The study was referred to as the SAACFAAC Study. This Summary highlights the history and findings of the SAACFAAC Study.

The SAACFAAC charter was issued in December 1979, and as originally written had a planned study termination date of March 1980. This date was chosen as reasonable due to the expected course of action assumed for the Study Group. It was expected that the SAACFAAC Study Group would start with the research and findings of other studies on the same, or related subjects, and using these studies as the basis of discussion, the Group would either accept or reject these previous efforts. Instead, the SAACFAAC Group, during the organizational meeting discovered that as a group they possessed a diverse background of expertise. As a result there were neither a common base of knowledge nor a common study departure point from which the Group could work.

To provide a common reference point, the group elected early on in its effort to develop what it termed the automation/communications baseline. This baseline would portray a "snapshot" of the Army with respect to these two services at a discrete point in time, subsequently chosen as May 1980. Pursuit of this baseline soon proved to be a monumental task and precluded completion of the Study in the time frame stated in the Study Directive.

As the baseline investigation matured, another trend became obvious to the Group ... there were significant automation/communications problems which were not organizationally related. The Study Director appeared before the Study Advisory Group (SAG) in April to explain the progress and problems of the Group. The SAG recommended, and the Study Sponsor approved, a revised course of action for the Study Group.

As a result of the SAG, the part time Group was converted to a full time group and met for a period of three weeks at Fort Belvoir, Virginia. The product of the three week effort was a completion of the baseline and definition of problems which impacted on the Army automation/communications services.

The baseline and problems were briefed to a second SAG in June. The SAG concurred in the baseline and problems presented. The SAG recommended, and the Sponsor accepted the recommendation, that the ACSAC accept solution action on all problems except one dealing specifically with organization. The organization problem would be the subject for a future General Officer Action Planning Conference after non-organizational related problems were either solved or had definite solution plans. A Study Group Final Report was prepared, and the Study Group stood down from its tasking in July.

With the preceeding paragraphs as a history of the SAACFAAC effort, the remainder of this summary will present a condensed overview of the baseline and problems defined by the Study Group.

The baseline was built around the framework of the Army Automation/Communications Network. This Network is the current Army concept for describing the Army services of automation and communications. It represents an evolution of all current automation and communications resources to those resources which will exist on into the future. There is no objective system for this Network; but rather, it will account for the evolution of all planned and unplanned, but needed, future systems. The Network was considered in light of its four major subnetworks: Tactical, Theater, Strategic and General Support. Using the Network framework, the baseline was developed in terms of objectives, policy, key players and processes.

The prime guidance driving the Army's effort in automation and communications is to satisfy the goal of providing the Army with an effective Automation/Communications Network capable of responding to the needs of the Army in both war and peace. This Network must respond to the needs of the Army commanders and functional managers. The Network must be able to acquire, store, process, transmit and display information in support of the Army's functional needs.

Army automation/communications policy is loosely defined as a definite course of action which has been adopted in response to some form of external impacting pressure or in response to a known goal or inefficiency. In support of automation and communications, we find policy subject to numerous outside pressures. These pressures include congressional mandates such as the Brooks Bill and Federal Telecommunications Act as well as standardization and interoperability mandates of the JCS, DOD and international alliances.

Internal Army policy with respect to automation and communications is promulgated in the 18 series of regulations for automation and the 105 series for communications. The ACSAC is the proponent for both of these series. Additional impacting policy is contained in other series of regulations dealing with acquisition, office management and security; all impact on both automation and communications services. The ACSAC is not the prime proponent for these regulations.

A major area of concern in the policy area is that of the acquisition of automatic data processing equipment and services. Army acquisition policy is the Staff responsibility of the DCSRDA. As such the DCSRDA promulgates Army acquisition policy, to include that for all automatic data processing equipment resources except those which are classified as commercial off-the-shelf items. These commercial equipments are acquired in accordance with policy promulgated by the ACSAC in Army Regulation 18-1. While recent attempts have been made to fully harmonize the two life cycles, there remain differences which are considered an irritant by some elements in the Army. Full harmonization remains an Army goal; however, outside pressures and influences currently preclude attaining the goal.

The areas of automation and communications services are both of a nature that they lend themselves to the provisions of federal policy on contracting out. This means that these services by law should be obtained commercially as opposed to being provided by a government operation. While there are exceptions such as those which cover operations by those elements which can be expected to perform their mission in the combat zone, the services which are provided within the Continental United States (CONUS) must be considered for commercial operations. This will impact on any future course of action for organizational alignment of these services.

Key players who have major roles in these services are headed by the HQDA Staff. The ACSAC is responsible to the Army Chief of Staff for coordination of automation and communication

activities of the Army. As such, he is the key policy player. However, the DCSRDA has responsibility for acquisition, the DCSOPS validates and prioritizes requirements to include automation and communications, other Army Staff elements are functional proponents for functional software systems.

The Computer Systems Command designs, develops and maintains the Army Standard Multi-Command Management Information Systems (STAMMIS) which are the major software systems of the Army. CSC responds to the various functional proponents in performing this mission. For example, logistics systems are prepared in support of DCSLOG and Logistics Center requirements. Other elements support other functional proponents. In addition, CSC supports two designated Army Project Managers for major automation projects currently under development.

The Army Communications Command (ACC) is the major Army command responsible for providing the Army extensions of the Defense Communications System. As such, ACC provides the non-tactical communications for the Army. In addition, ACC provides the interface between the tactical and non-tactical communications systems. Tactical communications units belong to the tactical unit which they support and thus are not consolidated under ACC. This leaves ACC as the single key communications player providing Network communications service outside of the tactical area.

DARCOM is a key player in the automation world in that they operate an extensive in-command automation service. Supported by two central software design agencies, DARCOM operates numerous data processing installations throughout the command. It is interesting to note that DARCOM does not operate or manage any BASOPS DPI's, common to most CONUS posts, although it does run STAMMIS software on its non-BASOPS computers.

Other MACOMs throughout the Army operate automation services which are less extensive than those of DARCOM. In CONUS, and to some extent overseas, posts are supported by a BASOPS data processing activity. These activities are used to execute the STAMMIS software, as well as MACOM unique systems. Most posts have a limited software development capability to design and program post unique applications. In general, the BASOPS facilities are saturated in terms of computer capacity. Project VIABLE is an ongoing program to provide new computers and peripheral equipment to replace the currently saturated BASOPS computers.

In addition to operating numerous DPI's, the TRADOC is also a key player in terms of doctrine. TRADOC is responsible for the development of all tactical automation and communications doctrine. While their mission has traditionally been confined to battlefield doctrine, new agreements are broadening TRADOC's doctrine development role to include Echelons Above Corps. In the communications arena, they are working jointly with ACC on this effort.

Other automation and communications players who have a key role in providing these services are identified. The Army Computer Systems Selection and Acquisition Agency, a Field Operating Agency of the ACSAC, is the Army's central selection agency for non-tactical computer systems. Under current policy, this agency is involved in all acquisitions which require a General Services Administration Delegation of Procurement Authority. The Communications Systems Agency, a major subordinate command of ACC, is the home of most non-tactical communications project management. This activity, although an element of ACC, reports to DARCOM on project management activities and is staffed with personnel from both ACC and DARCOM.

Using these key players and other identified major players, the SAACFAAC study group investigated the processes of how these players interacted in the four sub-networks. These processes were considered in terms of policy acquisition and operations. Of interest to the group was the ACC dual-hatting concept. Since the early 70's all non-tactical communications have been provided to the Army by ACC. It was initially feared that this verticalization of service would make it less responsive to that activity which it supported. To insure responsiveness, ACC in most instances has dual-hatted its subordinate commanders. Thus, they are not only ACC commanders of communications facilities, but they are also the staff communications officer of the command or agency which they support. The Study Group found this concept interesting as it discussed possible verticalization of non-tactical automation activities.

The final task of the Study Group was the definition of problems which impact on the optimal provision of automation and communications service to the Army. The following problems were identified:

Throughout the Army, the Automation/Communications Network is not understood in terms of Definition, Concept, Goals, Objectives and Integration.

There is a lack of clearly articulated, homogenous, and enforced Army automation/communications policy.

The Army needs a single agency with authority to initiate, coordinate, integrate, and disseminate automation/communication planning.

Automation/communications life cycle processes are not responsive, in both timeliness and capability to mission requirements.

The automation/communications community lacks an integrated organizational structure.

Current automation/communications systems do not adequately support the war fighting capability of the Army.

As previously stated, the ACSAC accepted action on all problems with the exception of the one relevant to organizational structure.

The Final Report took note of the fact that while these problems might appear to be a criticism of the ACSAC, that was not the intent of the findings. The Study recognized the difficulty faced by the ACSAC in trying to merge the management of two services which each matured in their own distinct and unrelated way. As they matured, various controls and power centers grew up around certain aspects of these services. The ACSAC must overcome these past thoughts and demonstrate to the Army the wisdom of its combined management approach to these two disciplines.

Although relieved of its initial responsibility of analyzing specific courses of organizational realignment actions proposed and available to the Army, the Group was able to spend time discussing relative advantages and disadvantages of selected options. While this analysis is not included in the body of the Study Report, it is contained as an annex to the report.

All of the information contained in this summary is expanded upon in the SAACFAAC report.

I. INTRODUCTION

INTRODUCTION

This document is a written report of the research and conclusions of the Headquarters, Department of the Army Ad Hoc Study Group chartered under the provisions of HQDA Letter 5-79-9 [1], dated 7 December 1979. The subject of the letter and subsequent study was, "Study: Alignment of Automation and Communications Functions of Army Agencies and Commands". For purposes of brevity, this study will hereafter be referred to as the SAACFAAC. This report covered the work of the SAACFAAC group from January 1980 through May 1980.

The report is designed to provide an overview of the automation and communications baseline which currently exists in the Army, and to report on problems identified in current Army organizations and policy which may contribute to excess cost and inefficiencies in support provided to the Army. The main sections of the report deal with: background; methodology; previous studies; guidance policies; key players; processes; summary and conclusions.

An executive summary, providing a generalized overview of this report has been included and deals with the complex interactions of policy, organizations and alignments. Due to this complexity, the executive summary should not be considered as a shortcut to the issues contained within this report. Personnel with an in-depth background in automation and communications will find the executive summary a meaningful summary document. Those readers who lack this background are cautioned against drawing conclusions from the compressed overview contained in the summary, which may impact on the future of the Army. The report itself will provide a sufficient overview for management personnel. Those not familiar with the current automation and communications baseline will find detailed support information in the report appendices.

PURPOSE

The purpose of this report is to present an objective baseline of automation and communications within the United States Army. This baseline may be thought of as a snapshot in time of the automation and communications worlds as they currently exist. No attempt has been made to cover all processes and interactions, rather the focus has been on the key players and their interaction. In certain cases, such as policy, the baseline does project beyond the snapshot where known approved policy changes will be forthcoming. All projections will be annotated in the report.

In addition to providing a static baseline, this report shows pertinent interactions of players and policy within the baseline structure. Whenever possible, a combined or interactive automation and communications baseline is highlighted. The combined, or integrated, automation and communications baseline is most relevant in understanding the integrated A/C network concept. Major divergencies in automation and communications policy and/or services are also highlighted as these areas may prove to be major impediments to the integrated attainment of an integrated automation and communications network.

The integrated automation and communications network concept is briefly defined and developed in Section V. - Guidance. The concept of the integrated network and its four component parts was used as the framework upon which the baseline processes were developed. The network concept has been chosen for baseline development as it represents the current Headquarters, Department of the Army, automation and communications overall concept. Other combinations and permutations of the network components, which will be described later in the report, can be used to portray other organizational and functional alignments of interest to a particular reader. Examples of this would be groupings of various sub-networks into tactical and non-tactical categories or echelons above and below corps.

The final section of this report presents and develops problem areas identified by the SAACFAAC Study. Each problem area identified by the study group will be presented with the causes that lead to the problem and the impact on the Army as a result of the problem. This report does not attempt to impose or determine solutions to any problem. In the timeframe covered by the report, and in conformity to the guidance provided by the Study Advisory Group (SAG), the SAACFAAC was charged by the Study Sponsor with problem definition only.

The intended use of this report is to provide written documentation of the research phase of the SAACFAAC. This documented research is available to this Study Group, to SAG members, to policy officials, and to other investigators concerned with problems in Army automation and communications services.

APPROACH

In an attempt to make this report as versatile as possible, it has been divided into three parts. These parts are an executive summary, a base report and a series of support appendices.

The Executive Summary was previously discussed in the introduction. It must be understood that the executive summary is designed for managers or decision makers with a strong background in Army automation and communications. The executive summary, like any summary, cannot stand alone as a decision making document.

The base report provides the narrative development of the Automation/ Communication (A/C) baseline and is designed to present a comprehensive overview of the group research effort. This report has been deliberately written in general, or whenever possible, generic terms so as to make it a more understandable and readable document. The important details necessary to augment the base report are contained in the appendices. With this approach, the base report is free to concentrate on interactions and processes rather than specific units or regulations.

The detailed appendices provide expansion, and specific facts which are omitted in the base report. The appendices are keyed to the base report and are designed to be independent portrayals of fact. The appendices can be extracted and used alone or updated as necessary. They have been used extensively to supplement the base report.

II. BACKGROUND

STUDY HISTORY

The SAACFAAC is an outgrowth of previous studies and other fora which have identified possible redundancies and/or organizational alignments which may contribute to excess cost and inefficiencies in automation and communication support provided to the Army. The original purpose of the SAACFAAC was to identify changes in current Army organizations and/or policies, if any which were required to develop an automation/communications network to satisfy the needs of the Army in peace and war. As will be shown, the mission of the SAACFAAC Study Group was revised based on problems uncovered during preliminary research.

Of all previous studies related to the problems being addressed in SAACFAAC, the one which directly parallels the effort was the Office of the Assistant Chief of Staff for Automation and Communications (OACSAC) directed Study of Management-Automation and Communications (SOMAC). [2] The SOMAC study was initiated by the Assistant Chief of Staff for Automation and Communications (ACSAC) in October 1978, the same month in which the ACSAC was initially chartered.

SOMAC was directed to look at certain problem areas which were associated with the Army and were relevant to the creation of the position of the Assistant Chief of Staff for Automation and Communications. Among these tasks were: to close out the Chief of Staff Memorandum which directed the formation of the ACSAC and required certain mechnical changes such as regulation revision to reflect the new staff agency; to investigate the roles, functions, and alignment of internal OACSAC agencies defined as field operating agencies and staff support agencies under the direct supervision of the ACSAC; and finally, to investigate Army automation and communications agencies which were not under the direct control of the ACSAC.

In addition to making recommendations on organizational matters, SOMAC was given the major responsibility for developing a new automation life-cycle management process which would be in harmony with other materiel life-cycle management processes within the Army. The results of the life-cycle portion of the SOMAC were subsequently adopted and at the time of this report are being incorporated into a revised Army regulation on management of automation resources (AR 18-1).

While life-cycle management policies impact on the SAACFAAC baseline in the area of acquisition policy, the organizational aspects of SOMAC most directly relate to the current study. SOMAC recommended a blueprint for the management of Army automation and communications. The goal of the SOMAC organizational blueprint was to provide the Army with an integrated teleprocessing network which fully integrated automation and communications operations in the corporate, or non-tactical, portion of the Army. The blueprint included four phases. The phases started with an initial detailed planning portion and ranged throughout the Army. The Information Resource Management, or IRM, concept has been further studied (under Army contract by the Arthur Young Company) and will be addressed later in this report.

An extract of the prime organizational recommendations of SOMAC was sent in memorandum form to the ARSTAF for comment. Comments ranged from total support through total non-concurrence. A fundamental criticism of the SOMAC effort was its use of personnel either assigned to the ACSAC or representing agencies directly under the ACSAC control. The criticism of failure to incorporate outside views was acknowledged by the ACSAC. This study is an attempt to incorporate more diverse views on A/C organizational issues.

As the ACSAC investigated ways to further perceive the known and implied organizational problems with respect to automation and communications, the Fourth Battlefield Automation Appraisal (BAA IV) released its tasking document. One of the tasks in this document was for the ACSAC to convene a special study group to investigate possible software development redundancies between the Army Computer Systems Command (CSC) and the Army Materiel Development and Readiness Command (DARCOM). The recommended conposition of the SAACFAAC Study Group to investigate the BAA IV tasking, was considered ideal to further pursue the SOMAC problems and subsequent automation/communications alignment recommendations of the Army Inspector General. The ACSAC therefore recommended and obtained approval for the expansion of BAA IV taking and to generalize the tasking into a broad based investigation of all actual and perceived problems associated with providing automation and communications services to the Army.

A draft study charter, which incorporated perceived problems, was staffed with the ARSTAF for comment and support. As a result of the staffing, the study was promulgated as the SAACFAAC Study Directive. In addition to ARSTAF representatives, the SAACFAAC included representatives from DARCOM, TRADOC, ACC and CSC. The MACOMs and CSC representatives were deemed necessary to insure that the SAACFAAC had representatives from all key players agencies in the automation/communications area.

The original concept of the SAACFAAC was that it would look only at specific problems ennunciated in the study directive. Although provision was made in the study directive for general investigation, it was assumed that the effort would previously focus on the specific problems presented. Based on this assumption, the study was targeted to terminate on 31 March 1980.

As study members proceeded into initial sessions, two facts became obvious. First, the expertise of study group members was focused in many diverse areas. While this fact enhanced the breadth of knowledge brought to bear on the problems, it did leave a gap in the common base of knowledge for all group members. Thus, it was decided to concentrate initial research on developing a baseline snapshot of the automation and communications world as it currently existed as a common point of reference.

The second early conclusion was that, focusing on specific enumerated problems in the study directive was not an accepted course of action. Group members collectively determined that previous studies lacked a definitive baseline investigation which SAACFAAC members felt was imperative prior to any discussion of, or development of problems. As a result, the SAACFAAC group determined that it would independently seek to ascertain which problems, if any, existed; or more importantly, perhaps, if problems did not exist, were there sufficient inefficiencies to consider organizational realignments. In

subsequent actions, the group chose to further define all problems associated with the automation and communications service support to include those of policy and procedure. These two courses of action were followed, but due to the complexity of the tasks the original completion date was not met.

A SAG meeting was held in April of 1980 to receive a Study Group progress report; to hear the rationale for extending the SAACFAAC beyond 31 March 1980; and to recommend a further course of action for the Study Group itself. As a result of this SAG, and with the full concurrence of the Study Sponsor (ACSAC) the task of the group was significantly narrowed.

Briefly, the task given to the group was to use the baseline information which it had gathered and determine problems and inefficiencies in today's automation and communications world. The SAG advised that the study group should not pursue solutions to the problems uncovered, but rather present the problems objectively to a follow-on SAG which would then, based on the magnitude of the problems uncovered, determine a means to achieve problem solutions [3]. To expedite this process, the part time study group was converted to a fully time group which met in session at Fort Belvoir, VA, from 6 May 1980 to 23 May 1980.

This report was prepared during the full time study period. During the full time period, the study group was augmented by representatives from the Communications Research and Development Command at Fort Monmouth to provide materiel development procedural background and assist with the preparation of relevant automation and communications materiel development appendices.

OACSAC HISTORY

Since this study focuses on the services of automation and communications as they exist in the Army today, it is important that a brief background on the Office of the Assistant Chief of Staff for Automation and Communications (OACSAC) be provided. The ACSAC is the newest principal member of the Army Staff, and has as a mission the responsibility to the Army Chief of Staff for all automation and communications throughout the United States Army. Merging of the management of automation and communications into a single staff element at HQDA represents significant management direction for the future of the Army.

Historically, the ACSAC traces its roots throughout two distinct and separate paths. One is communications and the other is automation. In the communications side, the ACSAC retains many of the substantive functions of the Office of the Chief Signal Officer, [10] later the Assistant Chief of Staff for Communications and Electronics (ACSCE) and later yet a major staff sub-element, the Telecommunications Command and Control Directorate, of the Office of the Deputy Chief of Staff for Operations and Plans (ODCSOPS).

On the automation side, the ACSAC has many of the functions which originally started in the Comptroller of the Army's Office and later were transferred to the Management Information Systems Directorate and finally to the Director of Army Automation.

As the Army Staff reviewed its management of automation and communications, under separate managers, it began to realize that these two technologies were rapidly merging. It became apparent that communications was dependent on automation and that new generation automation was dependent on communications. Under separate managers, requirements of one service were often developed independently of requirements of the other. As a result of this separation, communicators were often faced with the problem of having insufficient automation to accomplish their needs while automators planned teleprocessing networks which lacked sufficient communications to support the intended application.

In an attempt to alleviate this problem, a General Officer Action Planning Conference was convened to investigate the possibility of merging the management of Command and Control, Communications and Computers (C4) as a single entity. As a result of this conference and subsequent decision staffing, it was determined that command and control, a major Army function, should remain with its functional manager, the DCSOPS; while computers and communications as services should be merged under a single manager. The intent of this merger was to insure the effective integration of the two technologies.

As a result of the subsequent formal staffing which concurred in the recommendation, the Chief of Staff, and the Secretary of the Army approved the creation of the position of the Assistant Chief of Staff for Automation and Communications. MG Charles R. Myer assumed the position of the Assistant Chief of Staff for Automation and Communications on 1 October 1978. Personnel positions to staff the OACSAC came from the DCSOPS and the Army Automtion Directorate.

BASELINE HISTORY

As previously mentioned, early in the study it was realized that a necessary task for the Study Group was to develop an automation and communications baseline. The initial purpose of the baseline would be to show how the automation and communications world exists today within the Army in terms of providing serrvices. The results of the previously mentioned earlier SAG, postponed a determination of how the solution phase of the SAACFAAC would be accomplished. The SAG suggesting such possibilities as: a contractor effort, a full time study group with members assigned by MILPERCEN, a General Officer Action Planning Conference, continuation of the present group, etc., dependent on the magnitude of the problems defined.

This required a more comprehensive and general purpose baseline than had originally been anticipated by the SAACFAAC. In developing the baseline, significant questions arose as to what depth should the baseline investigate; where did the information reside with respect to the baseline; and how best could the group gather baseline information.

It was also necessary to determine how the group would do the investigation of the baseline. For example, should the baseline be restricted in any way to either tactical or non-tactical systems? Would it be best to pursue a baseline in terms of operation and maintenance (O&M) and/or research, development and acquisition (RDA)?

These and other questions consumed the initial discussion effort of the study group. The group concluded that a significant effort was required for the development of a comprehensive general purpose baseline therefore, the group needed a firm handle on just what elements would comprise the baseline itself.

The answers to these and other baseline questions were the genesis of much of the methodology used in the accomplishment of the study task. The final methodology for the baseline and other portions of this study will be set forth in the next section.

III. METHODOLOGY

OVERVIEW

The purpose of this section is to present the methodology used by the Study Group in determining the baseline. In addition, a brief discussion will center on methodology used by the group (after the baseline was defined) to develop and formulate problems uncovered by the baseline definition phase of the study.

To reiterate, the purpose of the baseline development process was threefold. First, the baseline was used by the Study Group (and could be used by future groups addressing the solution phase) to determine the actual situation in terms of automation and communications services and how they were provided in the Army structure today. Second, the baseline was used as a leveling vehicle to insure a common thread of understanding and knowledge existed throughout the entire study. Finally, the baseline served as a lead in to the identification of problem areas within the community. To accomplish these objectives, the group found that two specific efforts were required.

RESEARCH

The first effort concerned itself with research and information gathering. The second effort was that of group discussions based on research that was done. Since a significant amount of research was required, it was decided that the study group would be split into two sub-groups. One sub-group concerned itself with the automation world as it existed today while the other sub-group concentrated on communications. The automation sub-group was chaired by the DARCOM representative while the communications sub-group was chaired by the representative of the Army Communications Command.

The basic approach was to have each sub-group independently develop the baseline for its specific area of expertise. Following development of the independent baselines, they were combined to see how and where automation and communications mesh together. This was to be the basis of the combined A/C baseline. Using this baseline format, in particular, the combined structure, the overlap, duplication and/or inefficiencies could be highlighted.

The methodology then switched to group discussions where the research was analyzed (Analysis in this case refers to the development of problem statements which the group was tasked to determine).

For the research phase, the first task of the study sub-groups was to meet and determine in their respective areas what portion of the baseline knowledge they collectively had within their own expertise. Then they ascertained what

outside research was necessary to complete their determination of the baseline. Once shortfalls were identified, arrangements were made to fill in these voids. Whenever possible, a briefing and group discussion with the briefer on a particular research subject was scheduled [4].

In some cases, researchers were actually able to interview commanders and senior staff members of organizations deeply involved with activities identified as key players such as: MG Buckingham, the ACSAC; MG Paige, Commander of the Communications Research and Development Command; MG Hudachek, Commander, Computer Systems Command; and BG Lasher, Commander, Communications Systems Agency were personally interviewed by members of the group.

Other research was devoted to reviewing previous studies which dealt with the subject of interest to the group and also related subjects which could provide background information for group members. Examples of this included issues impacting on the automation/communications network, the Battlefield Automation Master Plan, and discussion with proponents and authors of Army regulations having a major impact on either the automation or communications baseline. Whenever possible, information briefings and discussions were held simultaneously with both the automation and communications sub-groups so as to maximize the use of available information.

ORGANIZATIONAL EFFECTIVENESS TECHNIQUES

Early in the developent of the SAACFAAC Charter, the Director of Management offered the professional service of the HQDA Organizational Effectiveness (OE) Team to assist the study group in its efforts. By using the talents of the professional facilitators assigned to the OE office at appropriate times throughout the study, the group was able to save valuable time by capitalizing on the facilitator's abilities to make the most of a group effort. The facilitators aided in the attempt to tear down biases, break through discussion barriers, and assist the group in constructively interacting with one another, thereby, capitalizing on the diverse background and talents of all group members.

The facilitators stressed the need for the group to establish clear definable goals, focus on problem statements and set forth group objectives that were attainable. The technique of using a professional facilitator was also used during the SAG meeting to insure that the concerns and expectations of senior members of the Study Advisory Group were put forth and known to the Study Group. The purpose of this was to insure that the major concerns of members of the SAG were included in all subsequent discussions of the group.

As a result of OE Sessions, one dominant fact surfaced early in the group effort. This issue was the lack of a clearly defined statement of a problem. Eventually, the group itself was tasked with the responsibility of finding this problem. However, the group was cautioned on numerous occassions not to seek a problem for the sake of finding a problem, but to look for inefficiencies or to accept the fact that no serious problem or inefficiency existed. With this key thought in mind, the group undertook its research which was utimately aimed at baseline and problem/inefficiency definition.

IV. STUDIES

The purpose of this section of the report is to briefly discuss four of the most significant studies which were initially determined to have a potential impact on the results of this study. The studies were: SOMAC, (which has been previously mentioned); the HQDA Information Resource Management Study; the Single Logistics Manager Study; and the Post Deployment Software Support Study. Each of these studies will be briefly summarized together with a discussion of the final Study Group analysis of the impact on the SAACFAAC effort.

SOMAC

The SOMAC study was in many ways the forerunner of the current SAACFAAC study. Details of the study were presented in Section II - History of the SAACFAAC. Briefly again, SOMAC was a two-phase study which looked at life-cycle management of automation and then studied OACSAC internal support agencies and non-OACSAC outside agencies involved with providing automation and communications services. The recommendations of the SOMAC set forth a new life-cycle management policy for automation which, as far as possible, homogenized Army Automation life cycle management with Army materiel management policy. SOMAC stated a policy regarding automation and how it could best be managed. under the concept of ACSAC. This recommendation of policy will eventually be included with a new revision of AR 18-1 (Summer 1980). Finally, SOMAC set forth a "blueprint" for the future of Army non-tactical automation and communications. The blueprint included a four-phase recommendation which would lead to both an Army Information Resource Management Activity

Two key points with respect to the SOMAC recommendation are that it advocated only an integrated operations and maintenance command and that the command would function only in the corporate portion of the Army. The proposed SOMAC Command would not operate on the battlefield or in tactical units. The proposed command would encompass non-tactical communications as well as "common user" (BASOPS, USAMSSA, etc.) Data Processing Installation (DPI's). The proposed command would also include the CSC and its current STAMMIS development function and it would develop and maintain systems programs for assigned hardware. All non-STAMMIS applications programs and programmers would continue as an organic part of their appropriate parent unit.

In addition, those DPI's which did not provide a common user service would remain outside the scope of the proposed command. Provisions were made in SOMAC's blueprint for eventual assimilation of other DPI's into the command at some point in the future if the proposed centralized operator concept proved to be in the best interest of the Army. See Appendix [2] for a summary of this study.

HQDA INFORMATION RESOURCE MANAGEMENT STUDY (AUTHUR YOUNG STUDY)

The HQDA Information Resource Management Study (IRM) was the result of increased recognition of the significant value and cost of information to an organization. The Army, like many other federal agencies and commercial corporations, generates and consumes significant amounts of data. The conversion of data into information is costly and when not properly managed, is often wastefully repeated (duplicated in two or more agencies).

Under the IRM concept (which is not a unique concept) a system is set-up whereby information is managed as a resource like all other valuable resources. Thus, appropriate recognition is made as to the significant cost required to manipulate and store information. Information resource costs may be viewed as similar to costs associated with other resources such as materiel, personnel, dollars, etc. As an accepted resource, information must be managed and properly controlled like other resources and not allowed to be independently managed in a totally decentralized manner throughout the Army.

This study was sponsored by the OACSAC and consisted of two phases. Phase I was an information gathering phase by the Arthur Young contractor. During this phase, the requirements for management and information, particularly automated information at HQDA were studied. As a result of this phase, it was determined that the contractor would proceed into Phase II during which a plan to implement Information Resource Management would be set forth. This pilot Information Resource Management program is for control and management of information at HQDA only.

While this study focused on management of information at HQDA, it has potential applicability as a model for a total Army-wide information resource management program. As this report is written, the IRM study recommendations are being staffed for approval at HQDA. Initial indications are that the recommendations of the study are receiving favorable reactions and some form of information resource management program will be implemented at HQDA. The actual extent of management in the program remains to be determined. See Appendix [5] for a detailed summary of this study.

SINGLE MANAGER LOGISTICS STUDY (LEA)

As the result of a recent Army Manpower Utilization and Management Survey, the HQDA Deputy Chief of Staff for Logistics (DCSLOG) tasked the Logistics Evaluation Agency (LEA) to conduct a study into the management of automated retail logistics systems for the Army. The study involved all potentially affected members of the Army Staff (ARSTAF) and applicable Major Army Commands (MACOMS).

As a result of this study, LEA recommended and provided justification for a single manager for retail logistic systems that should be appointed with the responsibility for total management of the Army's retail logistics systems. As part of the recommendation, a new Field Operating Agency (FOA) could be established as the single manager for all retail logistics systems. The scope of management of this FOA would cover all phases of the systems, from functional design through development and maintenance of systems. This would include the relevant logistics oriented STAMMIS.

The LEA Study is being staffed at HQDA. At this time, no decision has been made with respect to the recommendations contained within the study. It must be noted that since the LEA study proposes management of a STAMMIS outside of the Computer Systems Command, a significant break with current policy, this study can be expected to generate some controversy. If fully implemented, the study would create the proposed FOA by taking considerable assets away from TRADOC and the Computer Systems Command. Study logic for taking this organizational realignment step rests with the fact that these assets, though assigned to CSC, are actually fully devoted to retail logistics systems development. See Appendix [6] for a summary of this study.

POST DEPLOYMENT SOFTWARE SUPPORT STUDY (PDSS)

The subject of post deployment support, or maintenance, of any software system is of major importance to all users and managers of the system. While it has always been accepted, that the development of software systems is a difficult and challenging task facing software managers, it is now accepted that the maintenance of these software systems after initial deployment is just as, if not more, challenging than the initial development.

DARCOM, as the Army's MACOM responsible for development, acquisition and maintenance of materiel systems recognized the need for a viable PDSS plan. Therefore, DARCOM initiated a study and followed it with a proposed implementation plan to address that part of the overall system support necessary to sustain deployed computer system software [7]. The study deals only with Battlefield Automated Systems (BAS), and does not concern itself with those portions of the automation and communications world which are not operating on the battlefield.

The PDSS Study recommended that eleven centers in DARCOM, TRADOC, and the Computer Systems Command be designated as agencies to perform post deployment software support. The Study further recognized the critical need to maintain and continue a close relationship between the software developer and maintainer and the hardware developer and maintainer. As such the eleven recommended centers are those having missions for functional development, software development, and hardware development as part of their normal mission.

The PDSS Study and plan is currently being staffed within DARCOM. It is expected that after DARCOM completed its staffing of the study that it will be forwarded to HQDA and perhaps other interested MACOMs for their comments.

Since the study is currently within DARCOM no prognosis as to the eventual acceptance or modification of the study by HQDA can be made at this time. Realizing the need for a viable PDSS Plan, it is anticipated that DARCOM's proposal will have an impact on Army-wide PDSS plannig even if the study itself is not accepted.

IMPACT OF STUDIES ON THIS EFFORT

SOMAC has had no direct impact on this study itself. The major impact of SOMAC is providing a background with respect to the issues, the agencies involved, and stimulating initial thought among SAACFAAC. The IRM study is somewhat related to the SAACFAAC but not part of it. Should the Army make a decision to adopt the concept of the HQDA Information Rescurce Manager, policy may be set forth by this manager which would pertain to the operation of automation and communications; however, there is no obvious impact since the focus of the SAACFAAC is the entire Army and not just HQDA.

The Logistics Study, if adopted, will definitely have an impact on the baseline and thus impact on this study. If the study is adopted, it will separate a major STAMMIS developer from Computer Systems Command. This could have a ripple effect throughout other STAMMIS's and it will impact on how we are currently organized to support STAMMIS. The PDSS Study might impact at a later date; however, in the opinion of the study group, there is no immediate impact on the SAACFAAC baseline.

V. GUIDANCE

ARMY OBJECTIVES

A paraphrase of the Army mission is to be ready at all times to fight a war; further, if commited to the fighting of a war, to be able to quickly and decisively win the war. While various more formal statements of the Army mission are available, this is the essence of the mission.

To fight and win a war the Army must have an automation and communications network to provide these two critical services. Data processing and information transfer services must be available to support the major Army functions (structure, man, train, equip, finance, move, support, provide intelligence, & command and control the force). The challenge to the Army A/C Community is to motivate the full Army to take advantage of the potential of teleprocessing to provide instantaneous information processing and transmission and thus gain a decisive time advantage over potential enemies on the battlefield.

To accomplish this challenge, the Army must be able to rapidly acquire, process, transmit, and display information. These four manipulations of information are the life blood of the major functions which were previously mentioned.

OACSAC OBJECTIVES

Taking these broad Army-wide objectives with respect to automation and communications, the OACSAC (the principal staff officer responsible to the Chief of Staff, for all automation and communications throughout the Army) has established the goal of tailoring integrated automation/communications network to provide services to Army functional managers and commanders.

In support of this goal, the ACSAC has as an objective to plan and discipline this network to meet the Army's requirements with a cost effective automation-communications network. In addition, the ACSAC must acquire the resources and provide them to operate the network. And finally, the ACSAC is responsible for coordinating the research, development, test, acquisition, fielding, operation, and maintenance of all assets contained within the network. As this network forms the basis of development for baseline processes, and process interaction, it is important that an understanding of what is meant by the Army Automation and Communications Network be provided.

THE ARMY'S INTEGRATED AUTOMATION AND COMMUNICATIONS NETWORK

The Army's automation/communications network is a system interaction of equipments and players designed to acquire, process, transmit, and display information [8]. The network is not a network in the communications sense which consists of a series of links and nodes. Neither is it a network in the automation sense where information flows from computers and terminals to other computers and terminals. Rather, the concept of the Army's integrated A/C Network includes all current and future automation and communications assets available to the Army. Those assets which must interconnect will be interconnected. Assets that have no reasons for interconnection will not be interconnected. Thus, the network concept is an umbrella encompassing all assets of the Army available to acquire, process, transmit, and display information.

The network does not have a predefined objective system as a defined entity in the future or which is something that we are striving to obtain. Rather it exists today, and will continue to exist through numerous iterations into the future as requirments, doctrine and technology dictates. It includes all automation and communications assets in the Army today and all those which will be acquired in the future. Thus, the network is one of evolution rather than revolution. This is a most important concept when relating back to the automation communications network.

MG Buckingham, the current ACSAC, has stated that this network has no reason for being other than to satisfy processing requirements of the commanders and functional managers of the Army. It must also be understood that as simple as this concept seems, there are many issues which impact on the development, operation, and maintenance of the network. Issues such as policy, organization, and planning are critical both to the network and to this study. They are interwoven throughout many of the various sections of this report.

The concept of grouping all current and future automation and communications resources under the network umbrella, has been approved by the Army Select Committee (SELCOM) [9]. The ACSAC has undertaken an extensive campaign to articulate the concept throughout the Army. A proposed new Army Regulation will deal exclusively with the network concept.

Baseline investigation has indicated that many key Army personnel do not fully understand the proposed network concept nor are they fully comfortable with it. There is a growing understanding of the network concept among those who have studied it, while on the other hand, there are many in the Army who must deal with the network but who have not even heard of this concept. Publication of the aforementioned network regulation will serve to familiarize all network personnel with the concept and goals of the integrated Automation/ Communications network.

VI. POLICY

GENERAL

Policy is loosely defined as some definite course of action which has been adopted as an expedient or in response to a known inefficiency or in response to some form of external impacting pressure. Policy is formulated by senior managers and promulgated through various implementing directives or policy statements. In the Army, policy is normally promulgated through the use of Army Regulations. The purpose of this section is to look at various aspects of Army policy, which impact on the Army's automation and communications network. While Army policy is usually the result of some broader or more dominating national or Department of Defense dictum, it represents the policy for which Army goals and objectives are geared. Whenever there are overriding national or higher level policies, these will be highlighted throughout the rest of the section.

MANAGEMENT POLICY

For purposes of this report, management policy will be taken as the policy capstone. Under the heading of management policy, there are specific sub-policy areas which were of interest to the study. Examples of these specific areas were acquisition policy and operations policy, which will be covered in succeeding paragraphs.

Management policy is taken to be the broad, general governing direction which covers all aspects of either automation or communications. This section will key specifically on policy and will not address, develop or discuss issues related to those organizations or activities that prepare policy. (The key players in the area of policy will be discussed in the following section).

Automation policy in the Army is set forth in the Army Regulation 18 Series. Regulations within the 18 Series [11] cover topics ranging from Army Automation Management throught detailed operational procedures for actual data processing activities. To expand upon the policy regulations, a series of technical bulletins dealing with technical aspects of automation policy have been prepared. Some technical bulletins are currently in the field for use while others are awaiting either approval or printing at the time of report preparation.

Communications policy is contained in the 105 Series of Army Regulations [12]. This series of regulations covers all aspects of communication, ranging from tactical communications through those elements of strategic communications supported by the Army. Contained within this series of regulations are specific policy statements with respect to how requirements for communications services are satisfied in both the tactical and non-tactical communications world of the Army.

These two procedural regulation series represent the prime policy documents with respect to automation and communications in the Army. Like most other policy, however, automation and communications cannot be studied in isolation. There are numerous other areas of Army policy which impact greatly on the automation/communications network. While the study of the baseline indicated many such interwoven policies, it is possible to key in on certain highly relevant and interwoven areas of policy.

The AR 340 Series deals with the entire spectrum of office management [13]. Office management includes word processing systems and other automated systems used in support of various administrative procedures in the Army. With today's technology, it is very difficult to separate word processing systems from automatic data processing systems. Also, in the 340 Series, are policy statements with respect to computer output microform and various other micrographic applications which are physically related to both automation and communications. As automation and word processing systems grow more and more similar, in their functions, applications and capabilities, it is obvious there is a need for an inter-relationship of office management and automation policy in conjunction with specific definition of Office Management and word processing.

Another key aspect of policy which greatly impacts on automation and communications is the 380 Series of Regulations which deal with security. While dealing with automation and communications there are two forms of security which must be considered. Security policy represents security for the total systems themselves as well as the information contained therein. A classical example of this centers around the requirements to protect data bases which contain sensitive information about personnel. Most of our Army personnel systems contain this type of information and the information is often keyed to the social security number of the individual. By knowing these numbers, which in most cases are readily available, it is theorectically possible to gain seesitive information about individuals if the systems are not adequately protected to prohibit this.

Likewise, in passing information along communications systems there is a need to secure all these systems and prevent those not authorized from receiving this information from obtaining it through the system. Finally, the 380 Series deals with the physical security of these highly vulnerable systems themselves. Once again, we can see the relationship between the 380 Series of regulations to both automation and communications policy.

Another example of interrelated policy is contained in the AR 34- Series. This series of regulations is concerned with international rationalization, standardization, and interoperability. For example, it is current U.S. National Policy that all systems designed for use by our forces in Europe must be interoperable with systems of our NATO Allies. Therefore, in consonance with this statement of policy, we must insure that our automation and communications policies comply with the provision of the AR 34- Series. A regulation in this series (AR 34-) also states that command and control systems have the highest priority for innteroperability in the Army. This priority must be reflected in policy matters dealing with prioritization of automation and communications requirements.

From this discussion, it can be seen that basic automation policy is covered by the 18-Series of Regulations and basic communications policy is contained in the 105 Series of Regulations. It is apparent that reliance only on these two sets of regulations will not provide sufficient background in policy to make decisions relevant to the Automation/Communications Network. There are many other aspects of policy which, in themselves, are not related to either automation or communications by title, yet, which have a significant impact on automation and communications policy. [14]

ACQUISITION POLICY

One often controversial aspect of policy with respect to automation and communications is the subject of acquisition. Acquisition policy for all Department of Defense activities is contained within the Defense Acquisition Regulations. The Defense Acquisition Regulation or DAR is an outgrowth of the Armed Services Procurement Regulations (ASPR) which have been in existence since shortly after World War II. These regulatory documents describe procurement rules and the manner in which the Army will acquire products, services, & support. The DAR, while titled an acquisition document, deals primarily with policy on procurement. In essence, the DAR is merely the Defense Department implementation of the Federal Procurement Regulations (FRR) and Federal Property Management Regulations (FPMR).

In the broader sense, however, acquisition is taken to be more comprehensive than just the procurement of an item or service. Acquisition in the "Army sense" now refers to the life-cycle management process from the initial development of a stated need through the satisfaction of that need by a given means continuing to the eventual termination of service or retirement of the product or system. Life-Cycle Management of a given system or service includes the function of acquisition. Life-Cycle Management also includes tests, evaluation, development, project management, deployment, and post-deployment support.

Current Army life cycle management policies are an outgrowth of the provisions of the Office of Management and Budget (OMB) Circular A-109. This circular sets forth Executive Agency policy with respect to the acquisition of major systems. While the circular does not specifically define a major system, this determination being left to Agencies heads, the Circular outlines general guidelines for designating a systems as major. Among these qualifications are: that the system is directed at, and critical to, fulfilling an agency mission; that it entails the allocation of relatively large resources; and finally, that it warrants special management attention.

The procedure set forth in this circular states that any new major system must be supported by the identification of a serious shortfall in the ability of an organization or agency to perform its assigned mission. This mission need statement, which documents the need, is used as the genesis of the entire system development cycle. System development under this circular will be managed through a series of definite decision oriented milestones. (It is interesting to note that the circular was developed as a modification to the way the Department of Defense has traditionally managed its large or major projects).

Army policy with respect to life cycle management which includes development and acquisition is contained in the "capstone" Army Regulation 1000-1 [15]. This regulation incorporates the provisions of OMB Circular A-109 [16] and its implementing Department Directives [17]. The regulation further establishes policy for management of all major and Army designated systems. In addition, it discusses and sets forth policy for those systems which do not qualify as a major or Army designated system under the criteria of the regulation.

Non-major systems are managed using an abbreviated form of the major system development process. Non-major systems also have critical milestone decisions, but these are made at a lower decision level than those of a major systems. Thus, decision makers for non-major systems reside within the Army as opposed to the Office of the Secretary of Defense.

Specific acquisition policy details are contained in the AR 70- Series of regulations. The AR 70- Series provides detailed information necessary to implement Army Regulations 1000-1 such as non-developmental acquisitions, selection of project managers and management of embedded computer resources.

Acquisition policy as contained in Army Regulation 1000-1 and the 70-Series ideally should be applicable universally to all the Army. It is not. In 1955, Congress pased Public Law 89-306 which is commonly known as the Brook's Bill [18]. This law has its stated purpose "to provide the economic and efficient purchase, lease, maintenance, operation, and utilization of automatic data processing equipment by federal departments and agencies." The law and subsequent implementation by designed federal action agencies, has caused automation to be the most intensively managed resource within the federal government.

Under the provision of the Brook's Bill, general purpose commercially available ADP equipment can only be procured by a federal agency with the specific approval of or by the General Services Administration. For low dollar systems, a blanket delegation has been given to the executive agencies such as the Department of Defense. Any acquisition which exceeds the threshold of the blanket delegation must be forwarded to the General Services Administration for specific delegation of procurement authority. Therefore, although an agency, such as the Army, may have a validated need for an ADP system and the authorized funds to procure, it still must obtain specific permission from the General Services Administration before undertaking any procurement action.

Since automatic data processing equipment has been singled out for such highly intensive management, it has sometimes been handled in different channels from that of the normal acquisition processes. For example, within the Department of Defense, acquisition of systems falling under the provision of the Brook's Bill is controlled by the Office of the Assistant Secretary of Defense, Comptroller as opposed to the Assistant Secretary responsible for other acquisition processes and policy. Likewise, within the Army Secretariat, approval for commerical ADP systems falling under the provisions of the Brook's Bill is handled by the Assistant Secretary of the Army for Installation Logistics and Financial Management (ASA-IL&FM). Other acquisition processes are controlled by the Assistant Secretary for Research, Development and Acquisition.

With two separate and distinct reporting chains, acquisition of ADP is subject to two separate policy statements. Commercial, general purpose automatic data processing equipment, is procured and guided in it's acquisition by the provisions of Army Regulation 18-1 [19]. Acquisition of those automatic data processing equipments and services which do not fall under the provisions of the Brook's Bill is accomplished in accordance with standard Army acquisition policy.

The Army has undertaken significant steps toward harmonizing the procedures contained in both of these policies and to make them as similar as possible. Total harmonization, however, cannot be attained so long as there are two separate governing "ways to do things" and two separate distinct methods of management. It is important to note, that all ADP systems which are classified as major or Army designated systems are managed under the provisions of AR 1000-1. It should also be noted that even major systems dealing with the procurement of commercial general purpose ADPE must follow the specific acquisition provisions set forth in the Brook's Bill.

OPERATIONS POLICY

Operations policy can best be discussed as three distinct and separate categories. Non-tactical automation, non-tactical communications, and tactical automation and communications are the three universally accepted categories. While lines of distinction are not always as clear in the field as they are on paper, these classifications are convenient for descriptive purposes.

Tactical automation and communications policies follow the operational concept for all other equipment assigned to tactical units. Simply stated, the management of these systems is the responsibility of the unit commander that they support. Tactical support units such as signal battalions, are organized and equipped to support a very specific unit or to provide an area service to those units having no organic signal support available to them. Maintenance of tactical automation and communications equipment is performed by military MOS qualified repairmen. Maintenance channels follow standard Army echelons starting with operator maintenance and terminating with depot level or rebuilt type maintenance.

Non-tactical communications in the Army are normally a part of or an extension of the Defense Communications System. Much of the basic policy for non-tactical communications is thus promulgated by the Defense Communications Agency and the Army is primarily responsible for establishing policy to implement the guidance of DCA.

Since the mid 70's, Army non-tactical communications operation policy has been centralized in the United States Army Communications Command. To insure that the command is responsive to the support of its user's needs, ACC has

adopted the policy of dual hatting its field commanders into the staff of the units which they support. Thus the commander of an ACC unit providing communications support to a specific post will also be the staff signal officer for that post commander. The dual hat, which brings a dual rating chain, insures that commmunications is both responsive to the supported unit and to the overall Army communications requirement.

Non-tactical automation is for the most part decentralized. Numerous data processing activities are located throughout the Army. Some of these data processing activities are solely devoted to the support of the particular function or agency. Other data processing installations provide common user service to any authorized users.

Software systems being executed by these decentralized data processing installations range from tightly controlled Standard Army Multi-command Management Information Systems (STAMMIS) to small locally controlled unique applications programs.

Operationally, the non-tactical DPIs belong to the organization or installation commander who they support. In addition, each Major Command in the Army has a supporting automation staff. DPIs with the Major Command often work under the technical control of the MACOM ADP staff. Many Major Commands contain central software design agencies which prepare command unique applications for use of all DPIs within the MACOM. These Major Command standard systems are very similar to the STAMMIS system but are limited to use within the MACOM.

At HQDA, many of the staff agencies have one or more Staff Support Agencies (SSA) or Field Operating Agencies (FOA) under their control. Some of these FOAs or SSAs contain large major data processing installations. There are seventeen HQDA data processing installations which range in scale from small to large in terms of capability and equipment.

POLICIES FOR ACQUIRING COMMERICAL OR INDUSTRIAL PRODUCTS AND SERVICES FOR GOVERNMENT USE

No discussion of current policy dealings with automation/communications services and equipment could be complete without mention of the provisions of OMB Circular A-76 [20]. This Circular establishes the federal policy of relying on the private enterprise system to supply its needs whenever possible. Provisions of this circular are implemented by Army Circular 235-1.

The essence of this policy requires that, whenever possible, agencies of the federal government will utilize commercial industrial type services in preference to in-house services or products. Although much of the Army's non-tactical automation and communications products have traditionally been

acquired from commercial sources, there has been a further increase in pressure to rely on the commercial or industrial companies to provide those services. While there is often reluctance to rely on commercial services and do it "in house", the economics of "in house" operations are beginning to dictate use of contract services.

The trend is most obvious in non-tactical communications. Many Army camps and station telephone systems or portions thereof, have now been contracted out to the local telephone company for operation. A majority of the long-haul circuits utilized by the Army in support of its portion of the Defense Communications Systems is also contracted out to commercial companies.

The trend towards a commercial service approach is beginning to permeate throughout the non-tactical automation community as well. Through the use of time-sharing or other commercially provided services, the Army is finding an increased reliance on the commercial sector for providing automation services. Realiable projections indicate the trend towards commercially provided services will increase in the near future.

This migration towards commercial provision of automated services is due to the increasing costs associated with operating major data processing installations. In addition, an increasing number of small businesses are coming forth to provide acceptable and reliable service that was traditionally provided by major automation vendors in the past at high cost.

The future will be characterized by policy which will require a true cost effectiveness tradeoff -vs- economic analysis to be made between the Army providing a service and the Army contracting out for the same service. As more services are contracted out to the civilian community, the Army must continually assess the impact of such a trend on its mobilization and war-fighting capabilities.

DOCTRINE

A distinction should be made at this point between doctrine and policy. For the purpose of this report, policy is a statement of a source of action which has been adopted. Doctrine is a statement of the accepted way that a mission will be accomplished.

In the non-tactical world, doctrine is set forth in various technical standards documents. These standards for communications are prepared by the Defense Communications Agency or the Army Communications Command. Non-tactical automation doctrine is contained in various standards put forth by the Computer Systems Command for multi-command systems.

In the tactical world, doctrine must represent an integrated approach to the accomplishment of the mission. Army tactical communications and automation doctrine is developed and promulgated through the Combined Arms Combat

Development Agency (CACDA) at Fort Leavenworth, Kansas. This doctrine is developed using the various doctrinal centers and schools contained with the Training and Doctrine Command (TRADOC). In communications, the Army Communications Command is doctrinally responsible for linking tactical communications systems with non-tactical communications systems, and in this respect, they are responsible for preparing the necessary doctrine to accomplish this in consonance with TRADOC. The Army Communications Command is also responsible for all doctrine relevant to Air Traffic Control both tactically and non-tactically for the United States Army.

VIII. KEY PLAYERS

Section VI dealt with the development and interaction of policy as it pertains to automation and communications services in the Army. The purpose of this section is to set forth and show the interaction between key players in the fields of policy, acquisition and operation.

POLICY PLAYERS

By way of brief review, policy is a definite course of action adopted as an expedient or as the result of other impacting constraints. There are three major groupings of players used to set forth policy with respect to automation and communications. These players are: the Army Staff, the MACOMs and Field Operating Agencies. Field operating agencies normally only prepare policy in support of the various Army Staff elements, to which they are subordinate.

Major commands are involved in two forms of policy. First, they prepare policy in response to HQDA tasking. This is policy which is originated by a MACOM but which is promulgated by Army regulation from HQDA. On the other hand, MACOMs prepare and promulgate policy which is used by all sub-elements of the Major Command itself. In many cases, this policy affects numerous major subordinate commands, and has significant impact on operations of the Army.

For example, DARCOM prepares policy and regulations which affect all depots, development commands, and readiness commands with a resultant impact throughout the Army. Thus, DARCOM is writing and preparing policy for a significant portion of the Army's Automation and Communications Assets.

The Army Communications Command sets forth communications policy for the majority of all non-tactical communications units in the United States Army. ACC like DARCOM also prepares policy documents for Army-wide promulgation under the tasking of HQDA.

The major policy player for the Army is HQDA and in particular the principal elements of the Army Staff. Regulations stating policy are normally prepared under the supervision of the element of the Army Staff having direct responsibility for the functional activity covered by the regulation. General regulations covering the organization of the Army are normally set forth by the Director of Management from the Office of the Chief of Staff of the Army when such policy crosses functional lines. Of particular impact on this study are the policy roles of the ACSAC, the DCSRDA, and the DCSOPS.

The ACSAC by Charter is responsible for all automation and communications policy within the Army [21]. As such, the ACSAC is the staff proponent for publication of automation (AR 18-Series) and communications (AR 105-) regulations. Many of these documents are developed in-house by members of the OACSAC Staff, however, some are prepared by MACOMs or Field Operating

Agencies. Two field operating agencies reporting to the OACSAC, and key to the development of policy are the Computer Systems Command (policy, with respect to software standards and STAMMIS) and the Computer Systems Selection and Acquisition Agency (policy with respect to commercial ADP procurement).

The Deputy Chief of Staff for Research Development and Acquisition (DCSRDA) is the proponent agency for regulation relevant to the acquisition of materiel resources for the Army. The DCSRDA is responsible for the development and promulgation of AR 1000-1 and all other regulation in the AR 70-Series.

The final key Army Staff player with respect to automation and communications services is the Deputy Chief of Staff for Operations and Plans (DCSOPS). The DCSOPS has many roles, but the most significant with respect to automation and communications is functional proponency for command control systems and requirements validation/promulgation for Army systems.

As the functional proponent for command and control, the DCSOPS establishes policy with respect to all aspects of Army command and control systems. Modern command and control systems are dependent on effective automation and communications services which support them. Thus, a close working relationship is required between the ACSAC, who is responsible for providing the means for command and control systems and DCSOPS who is the proponent for the systems. This is a unique staff relationship where one staff agency is responsible for providing a service, and remains separate from the staff agency responsible for functional aspects of the service.

The final relevant policy aspect of DCSOPS is their role in validating and establishing priorities for Army systems. Automation and Communications systems, like all other Army systems, must have their stated requirement validated by the ODCSOPS Requirements Directorate. The validation decision is made based on need to the Army. Validated requirements are then subject to prioritization by ODCSOPS and subject to stated prioritization policy. While requirements prioritization may be driven by national or defense established priorities, the DCSOPS is responsible for ensuring the Army policy on requirement prioritization is in harmony with both established Army and higher level policies.

ACQUISITION PLAYERS

The purpose of this section is to identify the major players in the acquisition process. No attempt will be made to define all acquisition players, because they are to numerous to include in this report. Only those players who have a key role in the acquisition of either automation or communications, resources and services will be listed. In addition, a brief description of the role played by each will be presented. More detailed descriptions of the acquisition process and the players involved are contained elsewhere in this report.

ACSAC

The ACSAC plays two roles in the acquisition process. He is responsible for promulgation of Army policy and subsequent monitoring of the Army's compliance with the Brook's Bill. Thus, the ACSAC is a key link to the procurement of all commercial, general purpose automatic data processing equipment and services. The ACSAC has the Computer Systems Selection Acquisition Agency (CSSAA) as an assigned Field Operating Agency to assist in the procurement of major commercial ADPE and services.

CSSAA is the Army's central selection agency and works closely with the General Services Administration and Congress on procurement of commercial ADPE. Each service, by Department of Defense Regulations, is required to have a central selection agency to specialize in the procurement of general purpose ADP systems and services.

In support of this mission, CSSAA is organized with both a contracting element and technical support element. The contracting element performs procurement functions normally associated with an Army contracting office. They tend however, to specialize in procurement of large ADP systems and thus, the contracting officer is familiar with those requirements of law that are unique to procurement of general purpose commercial equipment. The technical side of CSSAA is responsible for assisting in the development of solicitation documents, in particular, the development of technical specifications. The technical element is also responsible to assist the contracting officer in the evaluation of vendor proposals.

By regulation, each major procuring activity is required to have an independant Head Procuring Activity (HPA). The ACSAC serves as the HPA for CSSAA. In this capacity, he is assisted by a Principal Assistant Responsible for Contracting (PARC) who in essence is the Army's Senior Staff Officer concerned with commercial general purpose ADPE procurement actions. As HPA for CSSAA, the ACSAC is directly involved in all major commercial acquisitions.

DCSRDA

The Deputy Chief of Staff for Research Development and Acquisition is the Army Staff proponent for acquisition policy. All acquisition policy emanates from DCSRDA with the previously noted exception of commercial, general purpose ADPE. All of the major programs, and many non-major programs, are monitoried at DCSRDA using a Department of the Army Systems Coordinator/(DASC). DASC's are specially selected, technically qualified officers who are responsible for staying abreast of their respective programs. The DASC's provide the interface between Army staff functional proponents and the materiel development agencies.

DCSRDA plays a major role in the acquisition and allocation of Research, Development and Acquisition (RDA) funds and Other Procurement Army (OPA) funds. Once appropriate priorities have been established, DCSRDA in coordination with other elements of the Army Staff is responsible for allocating and providing necessary RDA funds to the various materiel developers.

DARCOM

The Materiel Development and Readiness Command (DARCOM) is a key player in most facets of the automation and communiations resource world. DARCOM is the Army's prime materiel developer and acquirer. As such, DARCOM either develops and acquires, or commercially acquires, a majority of the automation and communications equipment used by the Army.

DARCOM, as the Army's materiel developer, works with the combat developer through formal and informal processes to insure that the materiel acquisition needs of the Army are being satisfied. DARCOM is the home of the majority of all of the designated and chartered Project Managers in the Army. All communications project Managers are either directly assigned to DARCOM, or are working directly for the Commander, DARCOM in their role as a Project Manager.

There are two exceptions in the automation arena. The Project Manager for Tactical Management Information Systems (PM TACMIS), and Project Manager for Vertical Installation Automation Baseline (PM VIABLE) are responsible for large scale key automation systems. These Project Managers, like DARCOM Project Managers, have specific charters of authority signed by the Secretary of the Army. Both of these Project Managers are assigned to the Computer Systems Command, which is a Field Operating Agency of the ACSAC.

These Project Managers were placed in CSC due to the heavy involvement of each of these systems with Army STAMMIS. CSC as the assigned responsible agency (ARA) for STAMMIS was considered to be a more appropriate parent organization for these two Project Managers than DARCOM. While this decision was made for good and cogent reasons at the time, it has continually been questioned as to whether it is effective and efficient to have these two key Project Managers assigned to a non-DARCOM agency.

Of particular concern is PM TACMIS. PM VIABLE is dealing mainly with a non-tactical system, and thus is considered to be properly assigned within the Computer Systems Command. PM TACMIS,on the other hand, is developing battlefield combat service support systems. While these systems do involve STAMMIS software, they also must fulfill requirements for equipments which will be operated and maintained on the battlefield. Development of battlefield equipment is the traditional and assigned role for DARCOM, and thus the question of placement of PM TACMIS in CSC remains an on-going debate.

COMPUTER SYSTEMS COMMAND

The Computer Systems Command, a Field Operating Agency of the ACSAC, is responsible for the development and maintenance of Army STAMMIS [22]. As such, CSC is involved in the acquisition and development of major software systems. If software systems continue their current trend of being the major cost associated with the development and acquisition of an automated system; CSC's role will continue to expand [23].

Since the command is an acquirer of software, which is a materiel resource, another question often raised is the placement of CSC as a Field Operating Agency under ACSAC. The question is, should CSC as a materiel developer, be either an independent command or a major subordinate command of DARCOM. In it's baseline investigation, the study group found a wide divergence of opinion on this question.

ARMY COMMUNICATIONS COMMAND

ACC plays a key role in the acquisition of non-tactical communications equipment and services. The Command is an Army designated Major Command. It is responsible for providing both Army base communication services as well as Army portions of the Defense Communications System. In this capacity, ACC procures items of commercial communications equipment and is heavily involved in the acquisition of leases for commercial communications services. Commercial leases are often procured by using a Defense consolidated agency which specializes in this service.

A unique agency within ACC is the Communications Systems Agency (CSA). The commander of CSA is the designated Project Manager for all Army DCS support programs, and in this capacity he is assisted by assigned Deputy Project Managers for each specifically designated program. While CSA is a major subordinate command of ACC, the commander CSA reports to the Commander, DARCOM in his capacity as a Project Manager. In fact,the command itself is a mix of personnel carried against manning tables of either ACC or DARCOM. The unique dual role of this command is found to be both acceptable and responsive to ACC and DARCOM.

ARMY TRAINING AND DOCTRINE COMMAND

The final key acquisition player is the Army Training and Doctrine Command (TRADOC). TRADOC does not perform a direct major acquisition function; however, they are the designated Army combat developer for most Army systems. As such, TRADOC is deeply involved in requirements development and validation for systems.

TRADOC, as the combat developer, works hand in hand with DARCOM as the materiel developer in an attempt to insure that the Army fields systems in a timely and responsive manner. TRADOC appoints its own TRADOC systems Managers (TSM's) to work directly with the DARCOM Project Managers on major systems. the TSM's perform the function of representing the user as a surrogate user. Use of the TSM started in the mid seventies and has been found to be an effective approach to influence the materiel developer to meet user requirements.

AUTOMATION/COMMUNICATIONS OPERATIONS PLAYERS

The purpose of this section is to define briefly those agencies that are key players in the operations of Automation and Communications facilities and equipment. No attempt will be made to provide an all inclusive list of A/C operators throughout the Army. This is not considered necessary for the purposes of this report. Only those operators who have a major role will be mentioned, and such mention will be in brief general terms. The purpose of this is not to define the operators actual role but to acquaint the reader with those agencies who have the major operational roles.

ACSAC

The ACSAC, as a general staff agency, does not in itself play a major role in the operation of any A/C facility. The ACSAC like most other general staff agencies does have an operational overview role. This role is exercised in the supervision of those Staff Support Agencies and Field Operating Agencies who operate DPI's.

In the case of the ACSAC, the United States Army Management Systems Support Agency (USAMSSA) is a major DPI which supports the Army Staff and the Army

Secretariat. In addition to providing this unique support to the staff, USAMSSA also provides data processing support to the Military District of Washington. The support provided includes execution of STAMMIS and performing a BASOPS type mission.

The Computer Systems Command is an ACSAC field Operating Agency, and although its prime mission is to develop STAMMIS, it also operate a DPI for the testing of STAMMIS prior to release to the field. Two Project Managers involved in the development of major automated systems, as previously noted, also work for CSC.

Finally, as previously noted, the ACSAC has an operational procurement role when dealing with CSSAA. Dealing with CSSAA the ACSAC is operationally involved in the supervision of its selection and acquisition of general purpose commercial ADPE. The operational role is most evident in the performance of the ACSAC's duties as Head Procuring Activity for CSSAA.

ACSAC's final involvement in the area of operations is concerned with the promulgation of policy for operation of communications and automatic data processing facilities. It should be noted that normally these procedures are not directly prepared at the ACSAC level. Procedures are normally prepared by appropriate operating agencies such as the Army Communications Command or Computer Systems Command for non-tactical automation systems. Operational policies and procedures for tactical systems are developed by the appropriate TRADOC doctrinal centers or schools.

ARMY STAFF

The majority of the Army Staff agencies have one or more Field Operating Agencies which support them. In many cases, the field operating agencies have organic major data processing activities in support of them. In this sense, the Army Staff agencies are thrust into an operational supervisory role. Some examples of field operating agency DPI's responding directly to Army Staff elements are the Command and Control Support Activity which reports to the DCSOPS, the Logistics Evaluation Agency responding to the DCSLOG, U.S. Army Military Personnel Center reporting to the DCSPER, the Reserve Components Personnel and Accounting Center which responds to the TAG and the U.S. Army Finance and Accounting Center reporting to Comptroller of the Army. The key point here is that collectively there are 13 Headquarters, Department of the Army DPI's operating major computer facilities in support of the Army Staff.

MAJOR COMMANDS (MACOM'S) AND UNITS

The prime operators of both Automation and Communications assets are the Army Major Commands and the tactical and corporate units which are subordinate to them. These are the agencies that actually comprise the key players in terms of operations. Two major commands need to be singled out for the role which they play in operations. These are the Army Communications Command and the Materiel Readiness and Development Command (DARCOM).

ARMY COMMUNICATIONS COMMAND (ACC)

The Army Communications Command as previously noted is responsible for providing the Army extension into the Defense Communication System (DCS). The DCS is the long-haul interconnecting service available to the Army. The Army Communications Command, headquartered at Fort Huachuca, Arizona is comprised of approximately thirty thousand people. In addition to their long-haul DCA responsibilities they are responsible for: Base communications systems both in CONUS and OCONUS, air traffic control throughout the Army both in the tactical and non-tactical environment; and providing the interface systems which will link the tactical and corporate communications systems for the Army.

In addition to providing this extensive communications support, ACC also operates a major software development facility as part of the Communications Electronics Engineering Installation Activity (CEEIA). This agency develops operational software for use in the Communications switching systems and provides command unique support for ACC software. CEEIA may be thought of as the central system design agency for software development within the Army Communications Command.

DARCOM

DARCOM is a major employer of ADP civilian career personnel within the Army. DARCOM is dependent upon automation and operates many DPI's which support the missions of its major subordinate commands, depots, and laboratories [24]. In addition to operating these DPI's, DARCOM maintains two extensive central system design activities for developing DARCOM command

standard software. DARCOM has an extensive repertoire of command standard and unique programs necessary for the smooth and efficient functioning of the command. Unlike other major commands located in CONUS, DARCOM does not operate BASOPS DPI's; however, DA standard systems such as STARCIPS, SCIPMIS, STANFINS where activated where appropriate.

NON-TACTICAL UNITS

The majority of the non-tactical units and organizations are assigned to one of the major commands. In CONUS, Communications to these activities are provided by the Army Communications Command. In most cases, the service provided by ACC is comparable to that provided by the commercial communications carrier. ACC is responsible for the sphere of operations from post central offices through installation and billing.

Data processing support to non-tactical units takes one of two forms. Those units which have requirements for and can justify data processing installations, are often serviced by a unique or "sole user" DPI. For the most part, these are data processing installations which are geared to providing a specific service in support of a unit or an activity. An example of this is the large data processing installation serving the U.S. Army Combat Developments Experimentation Command at Fort Ord, California. Although this DPI contains numerous processors in a multi-processor configuration, its prime mission is the support of the range instrumentation of CDED's test facility at Fort Hunter, Liggett, California. This facility does not perform general purpose "common user" applications.

On the other hand, installations and activities which cannot justify unique data processing installations of their own are normally serviced by one of the BASOPS or common user DPI's. These data processing installations are located at all FORSCOM and TRADOC posts in the continental United States as well as numerous other agencies such as Walter Reed Army Medical Center. BASOPS DPI's currently support their users with third generation general purpose IBM equipment. In addition to running STAMMIS, BASOPS DPI's provide local unique service to the Post which they serve and, if appropriate, operate MACOM unique systems.

MACOM unique systems [25] are developed to provide application support throughout a given MACOM such as TRADOC, [26] or FORSCOM. In some cases, MACOMS may share systems such as FORSCOM and TRADOC in their use of the SISPACS. To insure that the local commander can fully utilize BASOPS assets, a limited local programming capability is provided. This local design and programming capability [27] is used to provide the commander with unique programs which are applicable only to his agency or installation. It should be noted that this local programming capability is very limited.

BASOPS DPI's can best be thought of as similar to ACC telephone exchanges. They provide a common user service to all authorized customers. BASOPS DPI's are the property and responsibility of the local commander that they support. The priority is for the running of all applicable STAMMIS. Funding for BASOPS DPI's is part of the commanders operating budget.

TACTICAL UNITS

Tactical units unlike corporate activities contain their own organic automation and communications support elements. For example, in the division, a signal battalion is provided which is capable of establishing and maintaining the division communications system. Likewise a division has its own automation support capability. Although currently limited, divisional automation capability will be significantly expanded in the future.

In garrison, tactical units often receive operational support from garrison support elements such as ACC telecommunications centers or BASOPS DPI's.

VIII. PROCESSES

The purpose of this section will be to define, develop and discuss Automation/Communications support in terms of the integrated Army Automation/ Communications network. The Integrated Army Communications Network will hereinafter be referred to only as the network.

The network may be thought of as containing all of the automation and communications elements, activities and equipment within the Army. While this statement may be thought of as a world or total encompassing concept, it must be noted that the network is not meant to imply the total interconnection of all Automation and Communications services in the Army, nor is it intended to imply that the ACSAC is the operational Czar of the Army's A/C assets. Rather, the network is merely a concept for visualizing the totality of the systems.

All A/C assets belong to, or are a part of the network. Those which need to be interconnected will be interconnected, those which must remain separate, will remain separate. The role of the ACSAC is one of insuring that as these assets are developed, and as they become available, that there is an integration throughout which insures a sense of purpose in the development of A/C assets.

Since the network concept is so all encompassing, it is convenient to sub-divide the network in terms of appropriate sub-groupings. These sub-groupings or sub-networks are: the general support network, which deals primarily with post camps and station communications; the strategic network which is the backbone of long distance communications network; the theater network which may be thought of as the in-theater communications up to the corps rear boundary; and finally, the tactical sub-network which extends through the corps down to the forward edge of the battle area (FEBA). These distinct boundaries for the sub-network were chosen for many reasons. In some cases, they represent doctrinal break point, in other cases, they represent either communications or automation break points. But for the most part, they were selected as managable chunks of the totality of the network.

It must be remembered that the sole reason for having the automation/ communications network is to provide necessary service to the Army. Services take on the entire spectrum from merely providing a new telephone instrument in a facility to development of an entirely new STAMMIS. The satisfaction of a need both in automation and communications can be illustrated by one simplified flow process chart. This chart is shown as Figure 1. With the generalized concepts of this model in mind, an understanding of the processes can take place within each of the various sub-networks will be more meaningful. At the conclusion of this section, some specific examples for service will be worked through the model.

THE GENERALIZED REQUIREMENTS MODEL

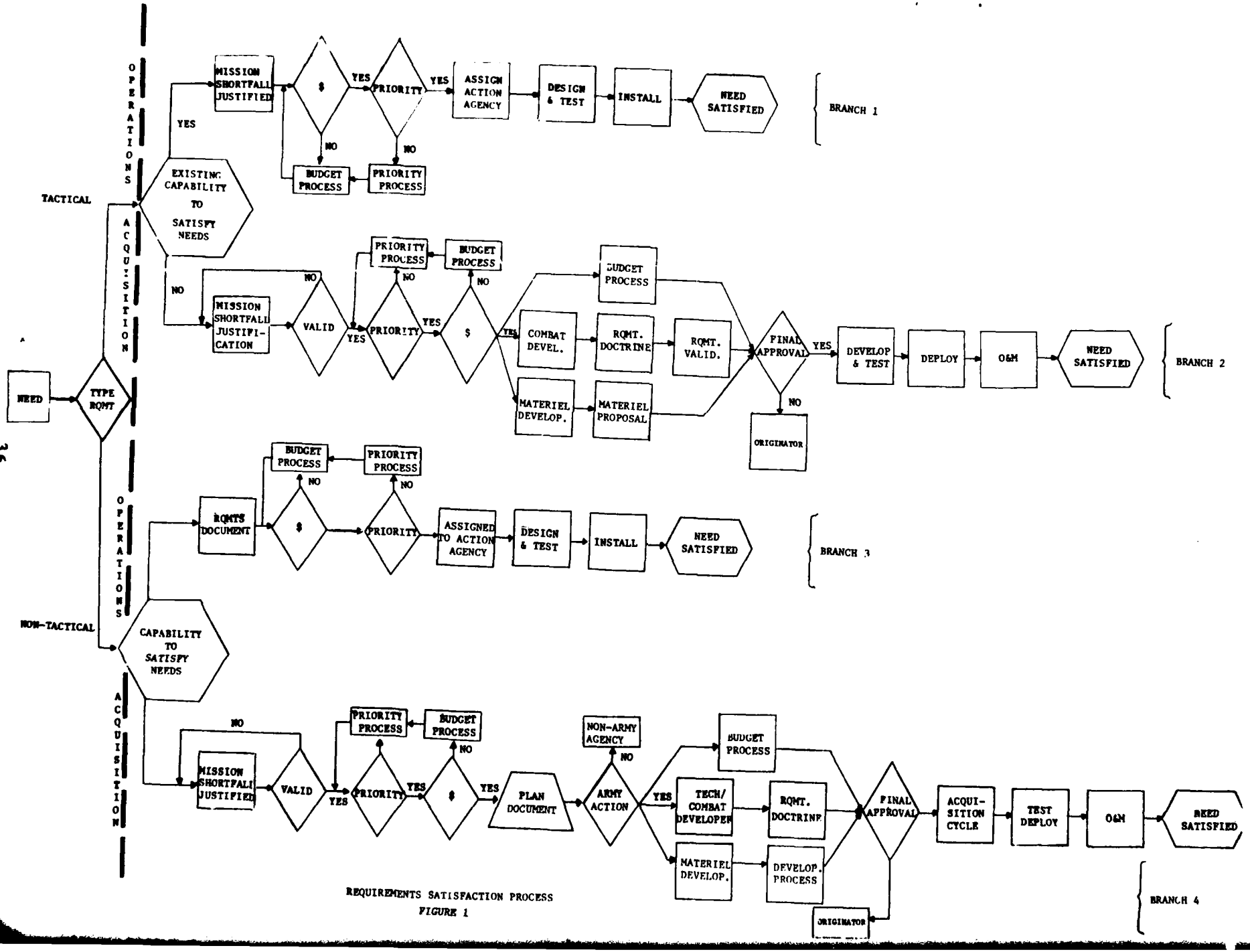
The purpose of this section is to describe the process of satisfying a need. For purposes of clarity, this process has been greatly simplified and is as shown in Figure 1. It should be noted that this development is a generic process rather than a process for satisfying a specific need. For example, model generic decisions are used as opposed to specific decisions which might in reality be made by a designated individual or forum. For our purposes, forum might be the ARSARC, DSARC, or an IPR. Generic processes have been chosen to simplify the development of the through process and the flow leading to the satisfaction of requirement. A specific details for various actual processes, and the players who are involved in these processes, are amplified as necessary in appropriate appendices.

It should be noted that the process has been greatly simplified for reader ease. Certain decisions may actually appear in the process at places where they would not occur in the actual development cycle. For example, the decision is made early in Figure 1 as to which type of problem is being satisfied, that of a tactical or non-tactical need. In an actuality, this decision might occur much later in the flow. It is important to bear in mind that Figure 1 is the development of the flow and not of the specific steps in the development of any need satisfaction.

As noted at the base of Figure 1, there are specific areas of the process that are separated by a dotted vertical line. To the left of this line is a section dealing with mission area analysis. To the right of the line is the process for requirement satisfaction. Not shown is a feedback loop from the completion of the requirement satisfaction process back to the mission area analysis. While this is not specifically shown on this Figure, it is important to keep in mind that the feedback process is very germane to all steps in the development cycle.

Mission area analysis is a continuous on-going process whereby a commander, manager, or staff principal continually evaluates the ability of his unit to satisfy an assigned mission. If, in the course of this continuing analysis, it is determined that there is a shortfall in the agency's ability to satisfy it's mission, then a basic need exists. If, in the opinion of the appropriate official, the need is valid and must be satisfied, then that is the essence of a requirement sufficient to begin moving through the process shown in Figure 1.

For purposes of Figure 1, the first question to be asked is -- is this a tactical or non-tactical need? While shown as a specific decision, this will often be made as part of the need statement development process. Once the tactical vs. non-tactical decision has been made, the flow proceeds to two identical decision blocks. These decision blocks both ask the question -- are the means currently available to satisfy this need? An example of this would be a need which could be satisfied, through a change in priorities or through a reallocation of existing resources.



REQUIREMENTS SATISFACTION PROCESS

FIGURE 1

The decision point is -- can the need be satisfied within the framework of including the existing resources, or must new resources be acquired, possibly development or acquisition of a new process or system. Again, it should be noted that, considering the regulations governing the acquisition of systems this decision will probably occur somewhat later in the process.

If the answer to the question as to whether the means are available to satisfy the requirement is yes, the upper decision leg will be taken. The upper decision leg is identified by the word "operation". This signifies that through operational procedures, the need can be satisfied.

On the other hand, should it be determined that operational procedures together with existing resources will not satisfy the need, then the lower decision leg is taken. This decision leg is marked "acquisition".

There are four possible branches which can be taken through the requirement satisfaction process. Branch No. 1 is that of satisfying the need through operational means for a tactical requirement. Branch No. 2 satisfies the need through the acquisition process for a tactical item. Branch No. 3 on the non-tactical route is the satisfaction of the need through operational means. Branch No. 4 takes the process through the acquisition of a non-tactical item or system. A step-by-step discussion of each block of each leg will follow.

Branch No. 1 -- Flow. If the decision process leads to the conclusion that a tactical need exists which can be satisfied through operational processes, Branch No. 1 will be followed. The first step on Branch No. 1 is to develop a requirements document. The purpose of the requirements document is to take an identified need and convert it into a requirement which, when satisfied, will satisfy the need.

The first decision in the process following the development of the requirements document is to ascertain that funds are available to satisfy this requirement. If funds are not available, then a return to the budget process at the appropriate level is necessary to acquire or program the additional or necessary funds to satisfy the requirement.

If the funds are available, the next decision is -- does the requirement have sufficient priority to be acted upon? If insufficient priority exists then a return through the appropriate priority process is required. NOTE: The priority process is normally interwoven with the budget process. Therefore, the flow is shown from the priority process back through the budget process.

Following the development of the requirements document, approval of the funds, and approval of the priority, the next generic step is to assign the appropriate sub-agency or agency action to complete the project [28]. Again, it should be noted that acquisition is not normally involved. However, certain non-developmental acquisition is not precluded on this path. Following assignment, the action agency is responsible for design and test of the solution to satisfy the requirements document.

After design and testing has been performed, the action agency will complete the installation necessary to satisfy the requirement. Once installation has been made, the need can be considered satisfied. At this point, the solution will be operated and maintained by the appropriate operations and maintenance unit. The need stating agency will continue to perform its mission area analysis.

Branch No. 2 is the process wherein a determination has been made that a tactical need exists and cannot be satisfied through normal operational activities. Therefore, some form of acquisition is required. This acquisition can range from procurement of commercial items, including commercial-industrial type services, through complete development of a new system by the Army. Since this process is often a long and expensive one, compared with operational change, the first thing that must occur is a complete justification for the mission shortfall. Again, the mission shortfall justification is generic, in nature as opposed to a specific requirements document.

Once this document has been completed, the mission shortfall justification is passed to an appropriate decision making forum for validation. If the document is validated, the process will continue. If the document is not validated, it is returned to the originator for either further justification or termination of the project.

A validated mission shortfall justification document is passed to the appropriate priority assignment forum. This forum will determine if the mission shortfall justification is sufficient to warrant action at this time, or if priority is insufficient for action. If the priority is insufficient, the mission shortfall justification is returned to the priority process where one can seek a higher priority.

When an appropriate priority has been assigned, the process proceeds into the financial validation period. Like the budget process in Branch No. 1, a decision must be made by the appropriate forum [29] as to whether sufficient funds exist to undertake satisfaction of the stated need. If sufficient funds are not available the mission shortfall justification is returned to the budget process for appropriate action.

It is important to note that the major difference between Branch No. 2 and Branch No. 1 in terms of financial approval rests with the location of the financial decision in the process. In Branch No. 1, where the requirement is satisfied through an operational change, the question of money occurs prior to the question of priority. In Branch No. 2, the validation and prioritization preceed the budget or financial determination. The reason for showing it this way is that the acquisition or development processes normally require significant justification as a means of entering an appropriate budget process. On the other hand, to satisfy a requirement through operational means normally only requires that the need be valid, and that funds be available from within the operating budget to accomplish the task.

Following the identification of necessary funds to accomplish the acquisition in Branch No. 2, three simultaneous processes begin to occur [30]. The top process is marked simply, "budget process". The purpose of this block is to indicate the on-going budget process which will occur throughout

the acquisition and development cycle. This process is continuous and overlays all phases of acquisition.

The mid-path can be defined as the operational development plan. On this path, a combat developer is assigned to act as the surrogate for the actual user of the system. The combat developer's role is to stand in for the user and insure that the user's needs are satisfied. A prime requirement of the combat developer is the actual development of a requirements document which will satisfy the stated mission shortfall justification. Following development of this document, the combat developer is responsible for insuring that the requirement is validated and that the materiel developer develops an acceptable means to satisfy the requirement.

The lower leg of the process is best defined as the materiel development leg. Following this leg, the actual items of equipment are either procured commercially or developed. A developer responsible for this process is designated. The materiel developer will prepare a materiel proposal which will form the basis for any acquisition or development to satisfy the validated need.

Completion of all of these legs leads to the final approval for the system. At this final approval, it is determined that funds to proceed are available, that a requirements document has been properly validated, and that a materiel proposal exists to satisfy the validated requirement. If the decision making forum determines that these, and all other factors which influence the decision have been satisfied, a decision can be made to proceed. If, at this point, it is determined that it is not in the Army's best interest to proceed, the originator of the need will be so informed so that appropriate alternate actions can be taken to satisfy the need.

If a final approval is given, the materiel developer and combat developer will proceed to develop and test a system [31], means, or process to satisfy the stated need. Following this test and development cycle, the need solution will be appropriately deployed to the requesting unit, or to all similar units who may share this need.

This is followed by normal operation and maintenance by the unit to which the means are assigned. Again, we show the need being satisfied but do not show the feedback loop that returns to the initiator and becomes a part of the on-going continuous mission area analysis.

Branches No. 3 and 4 are the non-tactical processes which lead to satisfaction of a non-tactical need. Branch No. 3 the operations process to satisfy need, is identical to Branch No. 1, and thus will not be described.

Branch No. 4 the acquisition leg of the non-tactical process, is very similar to Branch No. 2. However, there are some specific places where it has been expanded this is not to imply a difference, as both tactical and non-tactical are generally the same. The non-tactical has been expanded to call out two distinct steps that, although they may also be in the tactical process, are more often consideration in the non-tactical world.

An example of this might be in the communications area, where a communication requirement may be stated by the Army, but the means to satisfy the requirement rests with the Defense Communications Agency. In this case, the Army will take the planning document and refer it to the appropriate non-Army action agency.

If it is determined that the Army is the action agency, then the three leg process similar to that in Branch No. 2 will be followed. One minor difference occurs in the central branch, where a technical/combat developer is shown as opposed to the combat developer in the tactical process. This occurs because no true combat developer exists in the non-tactical world. Rather, a technical agency is assigned the responsibility for developing a requirements document and ensuring that it is satisfied by the materiel is satisifed developer. In the non-tactical world, it is also possible for the technical developer to be the materiel developer.

In the non-tactical acquisition cycle, it is most important to ensure that the provisions of OMB Circular A-76 are continuously considered throughout the process. This Circular pertains to the requirement for the Federal Government to contract out its needs to the civilian sector whenever possible. While the requirement also technically pertains to the tactical development process, combat oriented exceptions usually preclude outside contracting. This is not the case in non-tactical acquisition, and thus, the contracting-out requirements must be continually evaluated.

Figure 1 is a very simplified generic approach to the way the Army satisfies its valid needs. The figure has been deliberately simplified so that a basic understanding of the processes can be rapidly grasped. Thus, on one chart, we can follow a process for a need satisfaction as simple as in an additional telephone to one as complex as building a new tank. The processes are generically the same. The level of detail and decision to satisfy the need is what complicates the processes.

Some examples of the requirements flow through the model will be presented following a discussion of the various sub-networks that make up the Army's integrated automation and communications network.

GENERAL SUPPORT NETWORK

The General Support Network is best thought of as the network which provides corporate automation and communications support for the Army. Included are each of the communications systems on local posts, camps, and stations. In addition, these assets include the data processing installations which serve the local base commander in his corporate support missions.

The trend in general support network applications has been a stabilizing in the requirements for communications for voice and record traffic. On the other hand, there is a requirement for increased capability to transmit data both locally on post and off post through the entire general support system. With the proliferation of data processing equipment, to include most current generations of interactive word processing systems, the demands for data transmission systems is rapidly outstripping the capability of the local base communications systems to provide desired service.

The common user data processing installations (BASOPS, etc.) which support posts, camps and stations are also rapidly becoming saturated. BASOPS installations are running a mix of STAMMIS, command unique and installation unique systems on equipment which is considered archaic by current industry standards. This has caused much concern throughout the Army.

As more and more aspects of corporate support become automated, the ability to perform many of these services manually no longer exist. People are not trained to do this nor do they have necessary manual data interfaces available. Thus, the general support network can best be characterized as one of saturation due to increased demands for data processing services and transmission.

The Army has developed two plans to solve and remedy this situation. Project VIABLE is being developed to replace the current BASOPS DPIs and systems with more modern and powerful computers. A base communications plan has been developed by the Army Communications Command, which will be used to upgrade data processing communications as well as voice and record communications capabilities of Army posts, camps, and stations.

The general support network may be thought of as analogous to any large corporate style of network. For example, communications services are often provided by commercial communications equipment. The telephone instrument itself is usually identical to that used by the commercial world. The same applies to most of the switching and transmission facilities. Likewise, the data processing equipment is very similar to those which can be found in any large commercial organization. Software running on these data processing systems is conceptually identical to personnel, supply, and financial systems which are found throughout the commercial world.

Thus, development of equipment for use in the general support network usually consists of identifying the requirement and then executing a commercial purchase of general purpose commercially available, off-the-shelf equipment in both automation and communications.

Doctrine, if such can really be thought to exist in this sub-network, is primarily the doctrine of the commercial world. Since the post system is often interfaced with the strategic network or directly to commercial communications networks, doctrine and operating policy must be common to both military and commercial communications carriers. Likewise, in the automation area, programming of computers and operations follows patterns which are common to both industry and the military.

In conclusion, the general support network is a true Army corporate network. Applications, equipment and processes could be for the most part interchangeable with that found in any large corporation throughout the world. Although the general support network does not contribute directly to the war fighting capability of the Army, it is unquestionably important to the execution of that mission. In times of war or mobilization, the general support network will probably execute a mission very similar to its peacetime mission with perhaps the major change being in emphasis and priorities.

STRATEGIC NETWORK

The Strategic sub-network consists basically of non-tactical long-distance communications facilities and associated automated processes required too meet the command, control and intelligence requirement of the Army and to satisfy the related demand for data transmission. The strategic sub-network, of all various sub-networks, is the one where the Army is primarily a contributor rather than a manager. The strategic network encompasses national and international communications, automation, and command and control elements. The Army is a designated operator of portions delegated to the Army and also major consumer of services [32].

In terms of communications, the strategic sub-network centers around the Defense Communications System. Included in this is the Automatic Voice Network (AUTOVON) used for passing voice traffic and an ever increasing amount of dial-up data traffic; the Automatic Secure Voice Communications Network (AUTOSEVOCOM) which is used to pass secure information among authorized subscribers; and finally, the Automatic Digital Network (AUTODIN) used to pass record and data traffic among and between various nodes in the Defense Communications System. All of these sytems are continually undergoing revitalization and planned upgrades to accommodate the ever increased demands to pass data traffic over these backbone systems.

For example, the Worldwide Military Command and Control System (WWMCCS) is a highly automated computer based command and control system operated by the National Command Authority which extends throughout the world. The Army is responsible for operation and maintenance of certain WWMCCS sites, however, like most elements of the strategic sub-network, the Army is not the primary designer or developer of the WWMCCS system.

Since most of the backbone system is within the strategic sub-network, and either joint service operated or directly operated by Department of Defense, requirements usually are processed by a joint activity such as the Defense Communications Agency or the appropriate Joint Command Element. In many cases, the Army may be designated, like other services, as the executive agent for accomplishing the design, development, testing, and fielding of certain items of equipment or processes for use in the strategic sub-network. In a similar

manner, the Army, like other services, is tasked to operate a portion of the strategic sub-network. Operational doctrine is usually promulgated by DOD or a designated joint agency. Services such as the Army often develop local operating instructions which serve to augment but not change the general network procedures and instructions.

Equipment used within the strategic network may be either tactical or commercial. The equipment is usually commercial for those elements and links of the strategic sub-network located in CONUS. Those links which directly interface with tactical units, primarily at the CINC level, may be modified commercial equipment or tactical type equipment developed specifically for the strategic sub-network. As requirements are often satisfied, on joint service basis, strategic sub-network acquisition will often kick-out of the generalized flow process at the point where it asks if it is an Army requirement to satisfy the need.

THEATER NETWORK

The theater network which may be thought of as extending from the theater water's edge , through the rear of the corps boundary is perhaps the most complex and controversial of all of the sub-networks. The theater network, or the echelons above corps (EAC) network, is experiencing several doctrinal growing pains at this time.

While EAC doctrine is aimed primarily at applications other then automation and communications, automation and communications doctrine is a most viable part of EAC doctrine. Numerous studies are devoted to, and continually being revised, to define doctrine and integrate automation and communications systems within the theater. Among these are the Army Command and Control Master Plan (AC2MP) [33], the Army Battlefield Integration Concept (ABIC)[34] and the Command, Control and Intelligence Study (CCIS). These and other related studies are attempting to define and integrate the doctrine for use of battlefield automated systems within the theater.

The purpose of the theater network is to provide the necessary link between the forward corps and the CONUS source of personnel and logistics. Normally, the corps automation and communications network will traverse the area covered using both tactical and non-tactical equipment. Elements of the strategic communications systems often comprise elements of the theater network. For example, AUTOVON, AUTODIN, and AUTOSEVOCOM are normally fully integrated in the theater network, even though, they are basic parts of the strategic network. Whenever strategic assets are in the theater, they are under the control of the Defense Communications Agency, however, they are often operated by Army elements within the theater.

Within the theater, the problem of interfacing US systems with those of our allies becomes a reality. For example, it is in the theater that the United States communications and automation systems must interface with either theater alliance networks or directly with our allies. In Europe, for example, this sub-network will be the interface point between the US theater and strategic network and the NATO Integrated Communications Systems (NICS).

In terms of doctrine, communications doctrine for the theater sub-network is being defined and developed jointly between the Army Communications Command and United States Army Training and Doctrine Command. Automation Doctrine for the theater has not been as fully developed as that for communications. This is not to imply that either is currently in a finalized state, but rather development of communications doctrine for the sub-network is at present ahead or already provided by the Army Communications Command.

The United States Army Communications Command Theater assets are normally under the control of the tactical commander during both peace and war. Placing these units under the operational control of the commanders that they will support in times of war while no war exists, ensures a rapid and effective transition from peacetime to wartime requirements.

Automated systems currently in use within the theater sub-network are those developed in support of the major functional proponents. For example, logistics systems used are those developed and championed by the Deputy Chief of Staff for Logistics, Department of the Army in consonance with doctrinal development centers. The doctrinal centers are either operating agencies, Army Staff elements of an element of the TRADOC.

In terms of automation hardware development, a similar mix of tactical and non-tactical type of equipment is used within the theater. This mix of equipment in itself introduces many problems for the theater commander. For example, those assets which are commercial and non-tactical are normally at fixed and highly vulnerable locations. These locations are well known and are often presumed to be the first target in time conflict. On the other hand, the tactical assets which are more mobile and available for movement often take much longer to develop using the standard development systems and are never available in sufficient numbers to support the commander's requirment. Thus, as stated in the opening sub-paragraph, the theater network provides the most complex and controversial issues surrounding the Army automation and communications network.

TACTICAL NETWORK

The tactical network may be thought of as either the final link from CONUS or the first link from the enemy. Both automation and communications doctrine as used within the tactical network are fairly well defined. Communications doctrine has grown with units since the Civil War, and automation doctrine, although much newer, has been the subject of recent intensive study.

Tactical communications equipment currently in the field is for the most part, approximately 25 years old. During this decade, most of this equipment will be replaced with communications equipment defined by the Integrated Tactical Communications Study (INTACS). INTACS sets forth the objective system of communications equipment capable of carrying the Army into the 21st

Century. Among the programs rolled into the INTACS Objective System are the TRITAC program, SINCARS program, and for automation equipment that specified in the Battlefield Automation Master Plan. All of these plans and programs have fixed objectives. The equipment is being developed for doctrine that is being, or which has been written. Army personnel will be trained to operate and maintain these battlefield systems.

The equipment, both current and programmed, will be organic to the tactical TO&E of units which the equipment is designed to support. This equipment, with a few exceptions, will be developed jointly by DARCOM as the materiel developer and TRADOC as the combat developer following the acquisition Procedures set forth in Army Regulation 1000-1 and the 70 Series.

Functional Automation systems are being developed for or extended into the battlefield in the area of combat service support as part of the Tactical Management Information Systems (TACMIS) program. The TACMIS system includes both hardware and software. Since Army functional systems traverse all networks, PM TACMIS is faced with the unique responsibility of having to integrate numerous functional automation systems, often corporate based systems, with tactical equipment which is ruggedized and capable of being maintained and operated under adverse conditions by soldiers.

Thus, while the doctrine objectives and goals of the tactical sub-network are the most defined, the challenges are perhaps the most difficult. Strong emphasis is being given to development of effective hardware and maintainable software for use in the tactical sub-network. This is as it should be since demands are greatest and the requirements to be satisfied are among the most fluid.

SUMMARY AND EXAMPLES

This section has started with a generalized model of how requirements in the network are satisfied. The four sub-networks were then developed and described. Two examples will now be used to illustrate the application of the general model (Figure 1) to typical sub-networks requirements.
It should be noted that the whole purpose of this generalized process and using it to exemplify requirement satisfaction can form the basis of identifying problem areas. This activity coupled with the generalized problem given at the start of the next section should provide the basis of identifying other major problems or breaks in the link of how business is done today. Also these can be used to perform sensitivity tests on proposed changes to the baseline.

EXAMPLE OF A STAMMIS SYSTEMS CHANGE

1. Need: A change to STANFINS by Fort Dix.

2. The type of requirement is non-tactical.

3. There is a capability to satisfy the requirement without a development of a new technology. Therefore, the satisfaction of the requirement falls in the operation and maintenance category.

4. The requirement for change is documented by means of analysis of the requirement along with the development of functional guidance by the proponent.

5. The determination is made that funds are available for the change.

6. The requirement is prioritized alone with all other requirements against the available resources of manpower and time.

7. The analysis, along with the functional guidance, is given to the Computer Systems Command for technical analysis and development.

8. The Computer Systems Command analyzes, designs, and makes the software changes. The changes are then tested in conjunction with the Finance and Accounting Center.

9. The change is then installed and tested at a predetermined installation by Computer Systems Command, the Finance and Accounting Center, the MACOMs, and the user community.

10. If this test is approved, then the change is provided to the user community.

NEED

Design of a new MIS to operate on standard BASOPS hardware.

The need is defined by the functional proponent responsible for subject area (i.e., DCSLOG, DCSPER, DCSOPS, or Comptroller). If the system should be run on the battlefield as well as in peacetime, there will be indecision on the first stage, whether to go tactical or non-tactical. Today, MIS are defined for peacetime. If capability is not currently available, then, an RDA effort is required. A Mission Element Need Statement (MENS) required by revised AR 18-1 is prepared by the functional proponent validating the requirement and justifying the mission shortfall and ramification of operating without the system. Cost estimates are prepared to support the economic analysis which address all resources necessary to develop, acquire, operate and support the system over its lifetime. Approval authority of the MENS is determined according to System Class, which is determined by dollar value. A priority is assigned by the functional proponent within work to be accomplished at CSC, COA will establish relative priorities of all on-going financial systems and maintenance. If the dollars and priorities are appropriate development can start as soon as resources are available at CSC. Otherwise, the requirement is entered into the PPBS cycle. A planning decision document is prepared by the functional proponent to determine how the effort will be accomplished.

The life cycle systems requirements are entered into the budget process at the same time the ARA is named for technical development (STAMMIS are assigned to CSC). The Functional Description document is prepared by the functional proponent in coordination with the ARA. This will be in sufficient detail to allow the ARA to begin systems design and programming. No materiel development is necessary because the system will become operational on existing hardware. Final approval for the system is provided by the ASA(IL&FM). The decision is made during the process if the use of contractor services are appropriate. The system developer designs programs, tests, implements and maintains the system during its life cycle.

IX. PROBLEMS AND CONCLUSIONS
GENERAL

In addition to the presentation of the baseline, which is put forth in sections V thru VIII of this report, the SAACFAAC group was tasked to identify specific A/C problems. As stated in the preceeding section, these problems can be identified by using the process flow of Figure 1. In addition, problems can also be defined using the more generalized flow shown in Figure 2. Figure 2 shows the process on a broader level, starting with the strategy used to establish ourgoals. Once the goals are established, specific objectives are set forth and used as measurements in obtaining our goals. Based on these objectives, doctrine is prepared and planning commences. Once a plan is developed, acquisition of resources to satisfy the plan is undertaken. When resources are available, execution of the plan can begin. Although shown as a final step feedback is a continuous process throughout the cycle.

It must be recognized that the sequential steps shown in this process are often performed in parallel with one or two steps either overlapping or being performed simultaneously. This does not preclude using this most as a stage for purposes of discussion. Various other approaches to this simplified model have been set forth and the group would not argue with any logical position or perturbation of the model.


STRATEGY
GOALS
OBJECTIVES
DOCTRINE
PLAN
ACQUIRE
ORGANIZE
EXECUTE

FIGURE 2

The reason this model has been established is to show that there is a definitie process or a series of steps which one must go through in the course of satisfying a general strategy. If at any point a link is broken, then that problem must be solved before problems in following links can be truly defined. For example, if the problem is the lack of a definite goal, then problems with objectives, doctrine, and planning can be identified, but cannot be finalized until a goal is established. Once the problem of goal is solved, it may, in fact, provide the solution to what has previously been identified as a problem in a following step.

The group found this to be true as it proceeded to identify problems or inefficiencies as they exist with the baseline today. While the group did not stop with identification of the highest order problem such as statement of goals, it did continue to identify problems associated with lower order areas. The group was aware of the fact that the solution of the higher order problem may often carry with it the solution to many, if not all, of the lower order problems. Wherever the chain is first broken, that is the problem that must be focused on first.

PROBLEMS UNCOVERED

PROBLEM #1 - GOALS:

Throughout the Army, the A/C Network is not understood in terms of:

a. Definition
b. Concept
c. Goals
d. Objectives
e. Integration

CAUSES OF PROBLEM:

1. Differing concepts of the Network by automators and communicators. Communicators address Network vis-a-vis command/echelon orientation, such as long-line or point-to-point. Communications is a "common user service". Automators, on the other hand, consider a "network" to exist along functional lines which serves either a local community or a functionally oriented community. Automation is a "functionally oriented service".

2. Failure to articulate the evolutionary as opposed to the revolutionary. The network has been articulated as a "new" management technique, but it has not been derived as to what it readily is - a way of describing what is there, and of establishing the goals of where we want to go.

3. Complexity of a new concept (the A/C Network) coupled with the "growing pains" of a new staff implementing agency (OACSAC).

The OACSAC was formed on 1 October 1978. During the ensuing year, the network concept evolved, was articulated, and finally approved by the SELCOM on 26 November 1979.

4. There is a shortage of personnel experienced in or trained in, the combined automation and communications discipline.

Addressing the military force structure, there are 946 authorized positions, for ADP officers in the US Army and there are 3157 authorized positions for communications officers, that is Specialty Code 53 and Specialty Code 25 respectively. There are however, only 254 individuals in the Army that possess both the 25 and 53 MOS. This is an indication of appropriate training or experience. The Army has recognized the need for additional specialist training and has created a new specialized Officer Specialty Code, 25B with a training program at Fort Gordon, Georgia, to provide teleprocessing officers. While the exact number of authorized spaces have not yet been determined, it is estimated there will eventually be an authorization for between two and three hundred of these new specialty positions. It must be noted that there is no special dual career field for civilians comparable to the 25B field.

IMPACTS OF PROBLEM:

1. Inhibited from obtaining a common goal.

The services of automation and communiations cannot obtain a common goal if one does not exist. Goals have been initiated/established unilaterally, such as the fact that battlefield automated systems are moving towards the AC2MP objective. The combat service support systems on the other hand appear to be going in an unknown direction. It must also be pointed out that our current automation effort lacks a good interoperability goal.

2. The role of the ACSAC/OACSAC is not understood.

AR 10-5 which will provide the definition of responsibilities for the ACSAC has not yet been published. The Army Command and Control Systems Steering Committee (ACCS Steering Committee) oversees the ACCS, while the Automation and Communications Steering Committee (ACSC) oversees the combat service support transition plan. This is a clear example of dual management and a lack of clear understanding as to who is in charge.

3. Confusion and frustration among automation/communications personnel.

A clear goal is not understood, and thus there appears to be no objectives or road maps as to which direction the A/C community is heading. Thus, automation/communications people do not know the directions they are expected to go and will not know when they have arrived.

4. User confusion and frustration with automation/communications support. The users are confused and frustrated with the inability of the Army standard systems (STAMMIS) to respond to their needs. They are frustrated with the slowness of the response. In automation, they are frustrated with the length

of a SAILS run cycle. In communications, they are frustrated with the inability to get responsive AUTOVON access in a timely manner. Users are frustrated with the system and are thus finding ways of going around the system in order to obtain expected and demanded timely responses. A common solution is to acquire functionally dedicated automated systems or word processing systems for use in dedicated applications.

PROBLEM #2: POLICY:

There is a lack of clearly articulated, homogeneous and enforced automation and/or communications policy.

CAUSES OF PROBLEM:

1. The ACSAC role has not been clearly understood nor accepted by the Army. A revised AR 10-5 has not yet been published to clarify this role. CSR 10-29 is now under revision and while clarifying the ACSAC role at HQDA, as a CSR, it will not be promulgated to the field.

2. Outside policy forces beyond the control or influence of the Army. There are many policies that originate above or lateral to the Army. Among the sources of these policies are Congress, OMB, GSA, FCC and DOD..

3. Instability of A/C Management Philosophy. New people cannot pick up where the former manager left off without significant documentation of policies, procedures, goals and objectives. Rapid change without documentation requires people to interprete as they see fit. In the less than 2 year existence of the ACSAC, there have been two incumbents with two different philosophies..

4. Existing traditions and turf sensitivities impede policy changes. The other staff activites (ACSI, DCSLOG, DCSOPS, DCSPER, COA, TAGO) influence change within their separate functional staff proponent responsibilities. OACSAC turf is still being defined. This is sensitive because the ACSAC is involved in many areas due to the broadness of his charter.

IMPACTS OF PROBLEM:

1. Confusion over existing/"rumored" policy. The three-year development of a revised AR 18-1 resulted in rumors and initiation of procedures and organizational structures which were somewhat based on those rumors. When finally published, the revised AR 18-1 will improve the situation in the non-

tactical MIS and STAMMIS arena, but will not resolve the confusion in the tactical A/C world. The community perceives disparities between the DCSRDA sponsored AR 1000-1 and ACSAC sponsored AR18-1 even though each regulation refers to the other, and the policy developers that are preparing the work together in an effort to establish harmonized policies. Likewise, the field is confused with the perceived overlapping relationships between AR 340-8, as it applies to the acquisition of word processing equipment for administrative systems, and its relationship to AR 18-1. It appears some of the previously mentioned confusion over the A/C network policy could be removed, or mitigated by publishing an integrated automation/communications network policy in one document.

2. ACSAC has been unable to assume its delegated management role. The profusion of regulations that govern the acquisition, operations, and maintenance of automation/communications equipment and services, coupled with the failure to establish a single clearly defined A/C policy goal and set of supporting objectives, has impacted on ACSAC's ability to assume this role.

3. Automation/Communications management (throughout the Army) has neither promulgated automation policy nor has it developed needed automation/communications network policy. Attempts to date have been unsuccessful in integrating automation/communications functionally. Consequently, each element element continues to be planned and implemented as a separate function. Attempts at integration are currently only being "faced" at the HQDA level.

4. Common interoperability interfaces and standards remain weak or unresolved. The Technical Interface Concept (TIC) and Technical Interface Design Plans (TIDP) have not been completed as outlined in the Army Battlefield Interface Concept (ABIC). No one has or is enforcing the Army requirement for interface as outlined in the ABIC. As a result, we have not established the necessary protocols, and data element standards that would insure these interfaces. In addition, personnel who are working with the interface and standards areas are faced with three different sets of requiremnts originating from international, interservice, and intra-Army organizations.

PROBLEM #3 - STRUCTURE:

The A/C community lacks an integrated organizational structure.

CAUSES OF PROBLEM:

Lack of common published A/C network policy. (As long as this policy is lacking, it will remain as a deterant to arriving at organizational alignment solution(s).) While it is recognized there are other sources of this problem, it is felt that a policy void is the primary overriding cause of the problem.

IMPACT OF PROBLEM:

1. Potential to achieve economies of scale may not be realized. A parallel precedent was established with the organization of the Army Communications Command. This action saved an estimated sixty-five million dollars in seven years through world-wide consolidation of switch boards, reduction of maintenance intensive hardware, management levels, operational personnel, levels of overhead and so forth. Stove-piping the management and operations of DPI's be able to realize similar significant savings.

2. Potential Mal-utilization of resources exist. There will continue to remain overlaps in management levels, duplication of functions, inefficient operational independence, fragmented hardware/software acquisition, etc., without comprehensive organizational structure to support the automation community.

3. Lack of operational cohesiveness continues to exist in the automation world. The fragmentation of the automation operational facilities, i.e., DPI's not being tied together as part of an organizational entity coupled with the fact that there is no single manager of these facilities preclude totally effective utilization of these resources.

4. Automation and communications continues to be managed differently and separately from other Army services. The communications community centrally manages decentralized operations and as a result has achieved effective utilization of resources. Conversely, the automation community has no vertical organization or central management and has suffered accordingly in terms of effectiveness and efficiency.

5. Inhibits potential to take advantage of advancing technologies. A single manager could facilitate rapid response to system needs thereby enhanding acquisition ofothe latest available technologies. Economies of people, systems operation, system operation improvement, and so forth, sould be maximized. Centralized management also assist in promoting interoperability and standardization.

6. Automation standards continue to go unenforced. Current methods of standards enforcement range from non-existent to micro management by the local DPI authority. No common organizational structure exists to mandate a standards enforcement policy. The degree of enforcement rests with the management of the activity concerned. Each automation activity responds in its own way. Enforcement of standards would facilitate reportability of software systems, interoperability, continuity of operations, interchange of operational personnel with minimal training, and other advantages.

ADDITIONAL COMMENT:

The long range Army objectives might be to fully integrate the automation and communication facilities thereby maximizing potential in economies of scale, through utilization of the latest technologies. This may result in the following:

a. Savings in operational overhead.
b. Reduction in operation and maintenance personnel.
c. Reduction in operational facilities.
d. Common centralized acquisition practices.
e. Facilitates single point A/C management.
f. Promulgation of A/C policy.
g. Bring the A/C Network concept to fruition.

The issue is further developed in Appendix 35 and the reader intended as the subject should read this Appendix at this time.

PROBLEM #4 - PLANNING

There is no single agency with authority to **initiate, coordinate, integrate,** and disseminate automation and/or communications planning.

CAUSES OF PROBLEM:

1. Philosophical differences between automation and communications. A basic statement of the philosophical difference is centralized communications, decentralized automation. The communications world has evolved to a centrally managed organization that addresses the provision of **communications from point-to-point** and common user as a utility service. The Automation management organization is decentralized and addresses the provision of service along functional lines as opposed to common user oriented services.

2. Automation and/or communications cuts across all functional boundaries; all turf issues have not been resolved. Automation and communications are services that support all functional areas. However, functional requirements have not been defined in all cases. As an example, the Echelons Above Corps (EAC) functional analysis for automation is just not being accomplished and the communications requirements have not yet been defined.

3. Minimal interface exists between automation and communications management. TRADOC has established both headquarters and installation ADP/CE panels to insure the automation/communications interface during planning for TRADOC non-tactical systems. There are no known equivalent initiatives in the other MACOMs. ADP requirements are generally developed in unilateral functional enclaves, which are not organizationally a part of the provider of communications services. The Army must strive to insure that interoperability and integration factors are considered in the major planning actions, i.e., CAMP, AC2MP, INTACS, ABIC, TRITAC.

4. Planning has been conducted at various echelons without definitive policy guidance and direction from HQDA. The field has long awaited the publishing of the revised Army Regulation 18-1 and its supporting Technical Bulletins, which will harmonize the life cycle management of automation and address the automation and communications network. Planning within the field should be coordinated through HQDA direction and policy guidance.

5. Scope and magnitude of automation/communications technology. Automation and communications tehchnology is highly complex and changes frequently. This dictates a need for a more **responsive management structure inflences** policy, plans, and programs.

6. Some ADP is acquired, managed, and operated, outside the ADP community. In the past, equipment was considered ADPE based primarily upon its application. Unique functional applications were primarily developed as integral packages for small, inexpensive keyboard devices which did not fall under the policy for acquisition and use of ADPE. Hence, system control rested with the functional program manager, i.e., ACSI for intelligence systems, OTSG, for medical systems; TAG for administrative systems; DCSLOG for logistics systems and so forth. Evolving technology produced small computers capable of general purpose applications as well as unique functional applications. Furthermore, communications technology now enables unique functional applications to be decentralized through terminals which can use a central

computer as an extension of their internal processors. Currently, it is difficult to classify a piece of equipment according to a function. General purpose ADPE can support numerous functions without any limit to specific unique applications. It is neither practical nor effective to use two different management processes to justify equipment which is capable of either general purpose or unique functional applications. Functional managers need a functional process to structure the functional requirement. ADP management should provide the equipment to support the application either in a unique mode or multi-processed with other applications, or both.

IMPACTS OF PROBLEM:

1. No effective evaluation of proposed and/or existing integrated automation communications systems. As there are no plans available, there is no basis for the evaluation.

2. Inefficient duplication of systems (HW/SW). Redundancies could be removed through networking, if the Army has a planning posture to force and achieve the integration and interoperability of stand alone systems. The opportunity must continue to exist, however, for management creativity to develop command unique capabilities where a standard capability does not exist. This stand alone capability should be developed, however, with appropriate standards so that it could be a candidate for subsequent standardization and exportation. Examples of duplication of systems are installation property book systems, and installation management systems.

3. Limited ability for automation and/or communications to compete for scarce financial resources. It has been stated by some analysts that the Army is the worst in its capability among the services to articulate the need for automation/communications dollars. While this may be true, recently the Army has been getting an increase (proportionally) in A/C funds.

4. Inefficient automation and/or communications operations and maintenance. With the absence of enforced standards, the various command unique hardware and software systems, coupled with the multitude of standard systems and hardware, significantly impacts on the training required for personnel. In effort, this impacts upon the retention of skilled personnel.

5. Less effective support to the tactical commander in the theater of operations. There are instances where systems have been put on the battlefield without having been designed to serve the battlefield commander. Examples are SAILS; a strictly peacetime version of SIDPERS; VTAADS maintenance reporting and management systems, and others. Also, battlefield communications systems have been structured to accommodate these new systems that are expected to be fielded in the future.

6. Interoperability difficulties exist. For those applications, and elements of the network which must interconnect, an appropriate interface must be planned. General purpose computers procured as word processors, intelligence processors medical, processors, and so forth, have not been capable of integration into the network. Technological advances now make it feasible and necessary that they be integrated into the network concept.

7. Disconnect between the tactical and non-tactical world. The management philosophy currently in existence has been that of separation, not integration.

8. Unacceptable and expensive delay between the obsolescence of existing systems and the fielding of new generations. Budgetary constraints and built-in delays within this bureaucratic process and prime reasons for this delay. Policy must allow product improvements to be recognized as a way to reach the desired end. DAS3 was originally required to replace the NCR 500. At the time of its inception, it was conceived of as a much smaller, less expensive, and more mobile piece of equipment. The requirements continually increased to the point where they extended the timeline to get this system ready and into field.

9. Focus is on the automation/communications systems as an end in itself. Senior management addresses the A/C systems as an end to itself, rather than a service that is supporting the battlefield and/or non-tactical arenas.

PROBLEM #5 - RESPONSIVENESS

PROBLEM:

A/C systems life-cycle process is not responsive, in terms of timeliness and capability to support mission requirements.

CAUSES OF PROBLEM:

1. Research, development, and acquisition are event oriented while the budget process is calendar oriented. The TOS required fifty million dollars in 1979 to support its fielding but the funds were not available, therefore, these much needed systems could not be fielded.

2. Regulatory documents are complex and out of synchronization with each other. Examples of the complex and out of synchronization documents are the technical bulletins 18-109 and 18-111, the DODI 7938-3. Other documents that are also complex in their relationship and out of syncronization as far as being current at AR 18-1 and AR 1000-1 and DOD Directive 5000-1.

3. No responsible organization with authority to establish Army priorities for application of software development resources exists. Whereas the ODCSOPS establishes priorities for materiel development and programs, the standard software development activities respond to the various proponent agencies of the functional software systems. As an example, the DCSLOG prioritizes within logistics systems and the DCSPER establishes priorities within the personnel systems but there is no mechanism for establishing relative priorities across functional boundaries in the best interest of the Army.

4. Ineffective communications in non-tactical automation between requirement originator and software developer. There are several reasons for these in effective communications such as physical separation between the requirement originator and software developer. For example, the Finance Center is in Indianapolis identifying functional requirements while the Computer Systems Command in Virginia develops financial software. Other problems are that the software developer does not have on his staff functionally oriented personnel to facilitate the communications. Impacts resulting from this are exemplified by the backlog in the SAILS systems which has at least two years of systems change request awaiting processing.

5. "Better" is the enemy of good enough. This quotation which allegedly originated with a General Officer of the Russian Army is an example of life-cycle problem we face. Products that, in fact, are good enough to meet requirements of the US Army are not accepted because better products are perceived to be available through the evolving technology. As an example, TACFIRE was originally ready to be fielded in 1974, however, a determination was made that a better system could be provided. The "better system" required an additional thirty months of development time.

6. Management tendency is not to accept risk. This is illustrated by the extensive time consuming testing process that the Army requires. Recognizing that no product can be developed and fielded with zero level of risk; management has elected, whenever risk is identified, to extend the development process with the attendant development and testing time. As an example, the AN/TSQ-73 requires four million dollars to buy and five million dollars to test.

7. Rapid growth of demand for automation/communications services. The extremely rapid growth of the demand coupled with the rapid changing technology which provides the services and constrained resources as a group are factors which severely impact the timeliness of the life-cycle process to respond to automation requirements.

IMPACTS OF PROBLEM:

1. Use of obsolescent technology. Frequently, the Army is accused of using obsolescent technology in the fielding of their new systems because the development and testing cycle is so time consuming and the technology is changing to rapidly, that more modern technology is available by the time the equipment is finally fielded.

2. User requirements change prior to fielding of systems. The extremely long time period to define system requirements, obtain the approval for the system, develop and subsequently test the system is causing the automated systems to not be fielded in a timely manner. Policy and user requirements change, they are also not stable. As an example, counter-fire doctrine changed during the development of TACFIRE, which significantly delayed its implementation. As another development of the SAILS systems caused the delay of the DOD implementation of the materiel returns program by approximately three years.

3. Increased/scheduled cost. SAILS, TACFIRE, and many others have costs many times their originally programmed cost.

4. Obsolete, unsupportable systems in the field. An example is the NRC 500, which has been unsupported by its manufacturer for several years, the AN/VRC-12 radios have been in the field for many, many years, and have been obsolete in the terms of technology and commercial availability of repair parts support.

5. Insufficient equipment in the field. The life-cycle process is so long and costly that the Army has insufficient equipment in the field, such as, TACFIRE, AN/VRC-12 radios and multi-channel radars.

PROBLEM #6 - WARTIME ORIENTATION

Current A/C Systems do not adequately support the war fighting requirements of the Army. Nor do they have a balanced war/peace orientation.

CAUSES OF PROBLEM:

1. A/C systems do not give appropriate priority to support wartime requirements in that for several years, the emphasis has been on developing systems for "today's peacetime Army".

2. The Army has not been able to agree upon either the wartime requirements or the priorities. With a multitude of proponents, each looking at the Big Picture from his perspective, there has been very limited agreement on where to apply resources.

3. There is a disconnect between the tactical and the non-tactial world. Neither world has much awareness of the other's mission, A/C requirements, or applications.

IMPACTS OF PROBLEM:

1. Could lose the war.

2. Severely constrained A/C resources are not being effectively applied. Without the proper orientation, priorities, and wartime requirements known and enforced the limited resources are potentially developing the wrong capabilities to support war.

3. Without proper definition of requirements, and priority the support base will not have sufficient, technologically qualified, military personnel available for operation/use of the A/C systems during war.

RESPONSIBILITY

These problems in fact may be true problems or they may be inefficiencies in the way that we currently do business. The purpose of this sub-paragraph is to point out that this is not intended as a finger pointing exercise. Rather, an attempt has been made to provide an objective assessment as to where problems or inefficiencies exists. The ACSAC who has chartered this study has taken much of the blame. This is not to criticize a specific organization for it must be realized that in many cases, we are asking the ACSAC, or demanding of this agency, actions which have not evolved through a traditional development process. The ACSAC has taken two distinct services, automation and communications, which have matured individually and been required to merge them into a homogeneous entity.

COURSES OF ACTION

The actions following this study which utilize the baseline and work toward a solution to the problems identified, must seek to identify objective solutions rather than superficially read that the problem is only within this agency or that. It is easy to fault a single agency, where in fact the fault may be in many agencies or the result of higher direction or conflicting constraints.

The purpose of this report and its annexes has been to set forth a baseline and to define problems or inefficiencies which exist within the baseline today. Various courses of action are available to define ways to solve the problems presented. Among these are a continuation of this current study effort. However, the scope of the problems would seem to indicate that a part time effort, would be insufficient to fully come to grips with the stated problems, thus an in-house study, if desired, should be staffed with full time personnel if it is considered necessary to carry on to the solution of the problems identified. Another alternative would be to pass this on to a consulting contractor familiar with the area of the problem identified and seek solutions through impartial contractual efforts.

The final course of action is one which leads to the decision that the problem presented here are not of sufficient magnitude to warrant futher study effort, but rather should be identified and solved using the normal staff process such as the staff study or decision memorandum. Choices to manner of proceeding is not within the purview of this report but rather must be decided by the reviewers of this report and those responsible for determining the magnitude of the problems.

As a sidelight, the SAACFAAC performed an analysis of the original Essential Elements of Analysis set forth in the charter. Although this was not a task following the SAG, the group chose to evaluate the alternatives in light of the problems uncovered. The results of this analysis are contained at Appendix 35.

CONCLUSIONS:

As this report has focused on research and problem definition, conclusions from the report are not immediately obvious. However, certain conclusions can be drawn. First, there is a viable automation and communications network in existence today. It is there and it is working. While it may not be optimally efficient, and there may be certain problems associated with some aspects of it, it does work.

Problems and inefficiencies can be overcome or solved in many ways. Changes in policy may provide the solution and are certainly far less traumatic than any reorganizational realignment. On the other hand, organizational realignments though often traumatic, can be aimed at the heart of a problem or an inefficiency and often pump new blood into a process. The decisionmakers must weigh the magnitude of the problem to be covered before making realignment decisions.

Two other conclusions are obvious to the group. First, the problems identified were not new and were not unique. Many have been known for a long time and must either be declared non-problems or the necessary tough decisions must be made to solve these problems. The second conclusion is that the process is not hopeless. It is working, it can work better, and whatever is done, an attempt to make it work better should be carefully planned and thought out, to insure that additional problems do not result.

DEPARTMENT OF THE ARMY HQDA Ltr 5-79-9
OFFICE OF THE ADJUTANT GENERAL AND THE ADJUTANT GENERAL CENTER
WASHINGTON, D.C. 20314

S- 14 December 1979
S- 21 December 1979

DAAC-PEL (M) (3 Oct 79) 7 December 1979

Expires 7 December 1980

SUBJECT: Study: Alignment of Automation and Communications Functions of Army Agencies and Commands

SEE DISTRIBUTION

1. Purpose of Study Directive: This directive provides for the establishment of an ad hoc study group under the provisions of AR 5-5 to conduct a special study into alignment of automation/communications functions of Army Agencies/Commands with particular attention to the proposal to consolidate US Army Computer Systems Command (USACSC) with US Army Materiel Development and Readiness Command (DARCOM) and the proposal to merge USACSC with US Army Communications Command (USACC).

2. Background:

a. The Fourth Battlefield Automation Appraisal (BAA IV) perceived a problem which is stated as follows:

> DARCOM and USACSC are currently the two primary materiel developers for Battlefield Automation Systems (BAS), raising questions of duplication of effort and resources.

Resultant tasking required the Office of the Assistant Chief of Staff for Automation and Communications (OACSAC) to conduct a study of this issue and make appropriate recommendations. This directive implements and expands the scope of that tasking.

b. Other forums, to include TIG findings and the OACSAC Study of Management of Automation/Communications (SOMAC), suggest specific instances of less than optimal alignment of automation and communications resources and functional responsibilities. The ACSAC goal of bringing together

APPENDIX 1

automation and communications services for Army-wide networks implies a need to investigate integration of management and/or operation of selected automation and communications resources. All of these issues are interrelated with the question raised by BAA IV. Thus, the BAA IV issue cannot be addressed in isolation.

c. To insure that the best course of action is formulated, the issues of consolidation of USACSC and DARCOM must be addressed in light of the stated network goals and the organizational structure which will best support these networks.

3. Study Sponsor: Office of the Assistant Chief of Staff for Automation and Communications.

4. Study Agency: OACSAC, study chairman; ODCSRDA, ODCSOPS, ODCSLOG, ODCSPER, OCOA, TAGO, study members; DARCOM, USACSC, USACC, TRADOC, study observers.

5. Terms of Reference:

a. Problem: Possible redundancies and/or organizational alignment may contribute to excess cost and inefficiencies in automation and communications support provided to the Army.

b. Purpose: To identify changes in current Army organizations and/or policy, if any, that are required to develop an automation-communications network which will satisfy the needs of the Army in peace and war.

c. Objectives: The objectives of the study are:

(1) Make recommendations to OCSA on organizational and/or functional changes required to provide optimum efficient and effective automation and communications management and support to the Army.

(2) Evaluate the alternatives stated in the Essential Elements of Analysis (para 5i) which have been proposed recently and which affect the automation and communications support provided to the Army.

(3) Develop recommendations on any issues which are identified by the study group and which cannot be resolved by the study group or which may warrant additional HQDA study.

SUBJECT: Study: Alignment of Automation and Communications Functions of Army Agencies and Commands

d. Scope: The scope of the study shall include both tactical and strategic activities and operations and will consider the areas of automation and communications research, development, test, acquisition, fielding, operation and maintenance. All recommendations will be based on their contribution to the automation/communications network.

e. Limitations: The study will not attempt to redefine the mission, functions or responsibilities of the Army Staff Agencies.

f. Constraints: Recommendations on consolidation of USACSC and DARCOM must be reported as per BAA IV tasking

g. Timeframe: The study should address issues using a timeframe through 1990.

h. Assumptions: None.

i. Essential Elements of Analysis:

(1) How should the Army align automation and communications resources, functions and responsibilities?

(2) Can efficiencies be obtained by better statement and enforcement of policy while maintaining the status quo organizationally?

(3) Should USACSC be combined with DARCOM?

(4) Should USACSC be combined with USACC?

(5) Should USACSC be given command and/or direct technical control over selected DPIs?

(6) Should data processing assets in DARCOM be combined with USACSC and/or USACC?

(7) Should the Project Manager for Tactical Management Information Systems (PM TACMIS) Office and other Project Management Offices in USACSC be transferred to DARCOM?

(8) What other options exist and which should be adopted with or taken in lieu of those stated above?

j. Environmental Guidance No environmental consequences are envisioned; however, the study agency is required to surface and address any environmental considerations that develop in the course of the study effort.

k. Estimated Cost Savings: To be determined.

6. Responsibilities:

a. OACSAC: Provide study group chairman in the grade of Colonel to manage and direct the study group. Provide a permanent recorder for the study group, and necessary administrative support.

b. Study group members and observers: Provide study group member or observer in grade 04/05 or equivalent civilian.

c. Army Staff Elements and Major Commands: Furnish requested information to the study group.

7. Literature Search:

a. Interested Organizations:

OCSA	ODCSPER	WESTPAC
MD, OCSA	OACSI	DARCOM
PA&ED, OCSA	OACSAC	USACC
OCOA	OCE	USACSC
ODCSLOG	TAGO	FORSCOM
ODCSRDA	ODCSOPS	TRADOC
USAMSSA	USACSSAA	USAREUR

b. Previous related studies: Study of Management - Automation/Communications (SOMAC).

8. References:

a. SOMAC, Part 2, Automation and Communications Organizational Realignment Concept, Jun 79.

b. DA Letter, DAMO-RQC, subject: Fourth Battlefield Automation Appraisal (BAA IV), 11 Sep 79.

SUBJECT: Study: Alignment of Automation and Communications Functions of Army Agencies and Commands

c. Memorandum, DAAC-ZA, subject: Study of Management-Automation and Communications (SOMAC), 31 Jul 79, and responses to the memo.

d. Memorandum, DAAC-ZA, subject: OACSAC Performance Criteria, 30 Jul 79.

e. Memorandum, DAIG-AI, subject: FY 79 General Inspection of the United States Army Computer Systems Command by The Inspector General -- Information Memorandum, 4 Sep 79.

9. Administration:

a. Support: No funds are authorized for this study. It is anticipated that study group members will meet at the call of the study group chairman approximately nine hours per week. Participation of members and observers will be on a non-full time basis.

b. Milestone Schedule: The study report is due 31 Mar 80. The study team shall meet at the call of the study director. The SAG will meet 30 days after study initiation and every two weeks thereafter. The study group chairman will provide the Director of Management with a detailed study schedule.

c. Control Procedures: A Study Advisory Group (SAG) will be formed. The Director of Management, HQDA, will chair the SAG. SAG members will consist of general officers provided by each study group member and observer. The Senior ADP Policy Official will provide an observer to the SAG. The SAG will meet as directed by the chairman. DD Form 1498 will be prepared and submitted by OACSAC

d. Study format or outline. None specified.

e. Action Doouments: Appropriate tasking documents recommended as a result of the study will be prepared for submission with the final report.

10. Suspenses:

a. Names of SAG members will be provided to the OACSAC NLT 21 Dec 79.

b. Names of study group members and observers will be provided to OACSAC NLT 21 Dec 79.

c. Name of study group director will be provided to Director of Management NLT 14 Dec 79.

BY ORDER OF THE SECRETARY OF THE ARMY:

J. C. PENNINGTON
Major General, USA
The Adjutant General

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STUDY OF MANAGEMENT-AUTOMATION AND COMMUNICATIONS (SOMAC)

a. An internal study group (SOMAC) was chartered to identify ways to improve Automation and Communications services in the Army. The US Army Communications Command (USACC), the US Army Computer Systems Command (USACSC), the US Army Computer Systems Selection and Acquisition Agency (USACSSAA), the US Army Management Systems Support Agency (USAMSSA) and the OACSAC were represented on the study.

b. The study focused on the missions, functions and operating practices of agencies represented on the study group as well as DARCOM (primarily CORADCOM and CERCOM). Discussions were conducted with OSD, OSA and other Services. Whenever possible, personal interviews were conducted with activity commanders and principal staff officers.

c. The categories of Battlefield and Corporate were used by SOMAC to distinquish between those automation and communications elements which belong to or directly support combat units and those elements which support echelons above corps and the CONUS support base.

d. It was concluded that the management functions of both automation and communications were well defined for the Battlefield category. TRADOC, DARCOM, USACSC, and the unit operators had been tasked with specific functions. Although several different commands are involved clear lines of responsibility and support do exist. This also applied to the communications in the corporate world primarily due to USACC's worldwide support mission and joint development activities with DARCOM through the Communications Systems Agency. However, automation responsibilities in the corporate arena are not as clearly defined due to the past rapid growth and proliferation of information processing technology in the Army.

e. The Study Group concluded that automation support to the Army could best be improved by initially focusing on the corporate environment. Various courses of action were developed and evaluated. Among alternatives not selected were:

(a) Form an Army-wide Automation Command centered on USACSC. This command would have an operations and maintenance (O&M) responsibility for corporate DPI's and be responsible for standard, multi-command software development. While such a command could fill the identified voids, it would maintain, and possibly increase, the current management separation of merging automation and communications technologies. This was considered as a viable but non-optimal alternative.

(b) Assign the Computer Systems Command to DARCOM. This option had the distinct advantage of placing USACSC, primarily a sofware development agency, within the bounds of DARCOM, the Army's prime materiel developer. If all voids were to be filled under this option, DARCOM would become active in the non-tactical world which is neither their assigned nor desired environment. Like the above option, no joining of automation and communications occurs beyond the HQDA level. This option, though viable, was considered undesirable for reasons stated.

f. The course of action recommended by SOMAC is the creation of a new Army Automation Communications Command - referred to as AUTOCOM. An AUTOCOM would

come about initially through an amalgamation of the Army Communications Command and the Computer Systems Command. In addition to current USACC and USACSC functions, the command would eventually assume O&M responsibility for most corporate DPI's in much the same manner that ACC currently operates corporate telecommunications centers. USAMSSA and selected other HQDA DPI's would also be amalgamated into AUTOCOM.

g. AUTOCOM would bring to the Army in the field a merger of communications and automation. This decision was in keeping with the previous Army decision to merge these activities at HQDA with the formation of the ACSAC.

h. The realignment proposed by SOMAC called for some very significant actions -- creation of a new MACOM, elimination of USACSC and USAMSSA as independent agencies, and verticalization of most non-tactical DPI's. As such, when the study recommendation was briefed to the Director of the Army Staff, it was determined that a more detailed analysis should be undertaken to flush out SOMAC's recommendation. This detailed study group would have full authority to investigate alternative solutions if they should arise. The detailed study group, chaired by USACC, would include representatives from all affected commands.

i. The action was not implemented due to ARSTAFF reservations.

DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT CHIEF OF STAFF
FOR AUTOMATION AND COMMUNICATIONS
WASHINGTON, D.C. 20310

2 MAY 1980

DAAC-PE

SUBJECT: Study Advisory Group (SAG) Summary

SEE DISTRIBUTION

1. The SAG for the Study: Alignment of Automation and Communications Functions of Army Agencies and Commands met at 1330 hours, 21 April 1980. MG Thomas U. Greer, Director of Management, OCSA, chaired the meeting. A list of attendees is attached as inclosure 1.

2. MG Greer opened the meeting with a review of the purpose of a SAG. He emphasized that the SAG was to make recommendations to the Study Sponsor, the ACSAC, and not to make decisions. The remarks were concluded with a statement of the need to properly define the problem prior to attempting any solution or methodology.

3. MG Buckingham, ACSAC, reviewed the history of previous efforts which led to the current study effort. He emphasized the complexity of the problem facing the study group, and stated why the group could not meet the original study deadline. The remarks concluded with a reemphasis on the need to find a problem or potential efficiency worthy of reorganizational trauma, prior to making any recommendation for a reorganization.

4. MG Greer then initiated a sensing session of all SAG members as to their expectations and concerns relative to the study. These were recorded and are attached as inclosure 2.

5. COL Sivert, Study Director, presented a briefing on study group activities to date. He stated reasons why the group has not completed its efforts in the expected time period and outlined a proposal for completing the study. The essence of the proposal is as follows:

> To convert the existing study group from a part time to a full time effort for a period not to exceed three weeks. During the full time period, the group would define the current automation/communications baseline of the Army today. Using this baseline, problems or inefficiencies would be defined and articulated. Various type solutions would be formulated. The full time effort would be followed with a second SAG. The proposal also included a request to approve, in concept, a general officer Action Planning Conference as the ultimate vehicle for problem solution.

DAAC-PE
SUBJECT: Study Advisory Group (SAG) Summary 2 MAY 1980

6. The SAG discussed the proposal. Concern was expressed that a solution methodology was premature at this point. It was felt that the magnitude of the problem needed to be fully understood prior to any attempt at solving the problem. In addition, careful consideration as to the type of problem was also required. A problem of policy, for the example, should not be solved by realignment.

7. The following recommendation was approved by the SAG:

Convert the current part time study group to a full time effort for an initial period of three weeks. Task the group to use this three week period to fully define the problems or inefficiencies, if any. Following problem definition, report back to the SAG for advice on a methodology to solve the problems/inefficiencies. If applicable, consider the impacts of the HQDA Information Resource Management Study and the Army posture in the mid 80 timeframe.

8. The SAG adjourned at 1545.

9. MG Buckingham accepted the recommendation of the SAG and has directed the Study Director to implement the recommendation of the SAG.

2 Incl
as

WILLIAM D. SIVERT, JR.
Colonel, GS
Director, Policy, Plans & Evaluation

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COMMANDER
US ARMY DEVELOPMENT AND READINESS COMMAND
US ARMY COMMUNICATIONS COMMAND
US ARMY TRAINING AND DOCSTRINE COMMAND
US ARMY COMPUTER SYSTEMS COMMAND

LIST

OF

ATTENDEES

Inclosure 1

21 April
1000-1200 Hours
3E635

ATTENDEES:

MG GREER	DM
MG BUCKINGHAM	ACSAC
MG MOORE	DARCOM
BG(P) HUDACHEK	CSC
MR. MABIUS	ACC
COL SWYGERT	DCSPER
COL LARSEN	TAG
COL KETCHUM	TRADOC
MG FAZAKERLY	COA
COL MANNER	DCSLOG
COL TIMLIN	ACSI
COL BALZHISER	RDA
MG MAHAFFEY	OPS
MR. TOULME	OASA(IL&FM)

Inclosure 1

EXPECTATIONS/CONCERNS

1. Is there a problem?
2. Will restructuring mean less responsiveness?
3. Are we talking software or hardware or both (scope)?
4. Reorganization should be the last alternative.
5. Scarcity of talent.
6. Inability for CSC to establish priorities.
7. Conflict with functional managers in stovepiping configuration.
8. Dealing with more than one materiel developer (like to see improvement).
9. Lack of commonality between systems - - need for programming standardization.
10. CSS transition--need for correlation.
11. Make sure study methodology matches complexity of problem.
12. Problem not properly defined.
13. Software management.
14. Technology considerations not adequately investigated.
15. Need to develop convergent systems for peacetime and war.
16. Duplication with post deployment software support.
17. 18-1 versus 1000-1...regulation versus structure.
18. Don't want CSC to maintain two baselines for same functional alignment.
19. Accessability of developer with Senior ADP Policy Official.
20. Tendancy not to dig for problem.

21. Dig all the way into the problem, let all worms crawl out-look at all.

22. Management improvements:
    Duplication - inefficiencies
    Shortage of programmers - using them to best advantage.
    Improve both effectiveness and efficiency

23. Don't let turfing interfere with best interests of the Army.

24. Is the study group high powered enough to do this job?

25. ADP systems more responsive to the installation commander.

26. Way to measure, account for, audit how much automation is in the Army.

BACKGROUND BRIEFINGS

1. Study of Management - Automation and Communications (SOMAC)
2. The Automation and Communications Network Concept
3. *ADP Acquisition and the Role of the Army Computer Systems* Selection and Evaluation Agency
4. The Army Communications Command
5. The Pentagon Consolidated Telecommunications Center
6. ACSAC Resource Management - ADP PPBS
7. DARCOM Automated Systems
8. World-Wide Military Command Control System (WWMCCS)
9. Communications Research and Development Command (CORADCOM)
10. Communications System Agency
11. AR 1000-1
12. AR 18-1
13. Micrographics
14. Word Processing
15. Strategic Communications
16. Tactical Communications
17. Information Resource Management Study
18. Computer Systems Command
19. PM TACMIS Briefing
20. PM VIABLE Briefing
21. INSCOM Automated Systems
22. Fort Ritchie Consolidation
23. Communications Electronics Engineering Installation Agency
24. AUTOCOM Architecture for the 80's
25. TRADOC Automated Systems
26. CACDA Battlefield Automation Plans

INFORMATION RESOURCE MANAGEMENT

THE ARTHUR YOUNG STUDY

a. The Information Resource Management (IRM) concept recognizes the significant value and cost of information to an organization. IRM advocates the need to manage information as a resource in a manner analogous to the way people, money, and materiel are managed. Information is an important commodity to the Department of the Army. The automation of information throughout the Army ties IRM to both automation and communications. An IRM program will provide more effective management of information while controlling associated costs.

b. Under sponsorship of the ACSAC, Arthur Young and company completed a study on Information Management at Headquarters, Department of the Army. Phase I of the Arthur Young IRM Study determined the requirements for effective management of automated information among HQDA organizational elements. Phase II of the Arthur Young IRM Study proposed an information management methodology, organizational structure, and implementation plan for an IRM program. The Phase II report also presents a defined IRM program for HQDA for managing automated information under a distributed organization. The program is in the Office, Chief of Staff with ten sub-programs managed at ARSTAF level by TAG and ACSAC. In addition, each ARSTAF agency will develop an IRM organizational element based on the agency mission.

c. The lack of a coordinated IRM program for automated information relates to parts of the SAACFAAC study since the IRM program deals with information management conjunction with, but not congruent with, the management of automation and communications. Basically, IRM is related to, but not an integral part of A/C management and functions. The Arthur Young IRM recommendations are currently being staffed at HQDA and if accepted should be implemented by 1981. An IRM program at HQDA would not affect Department of the Army organizational alignment but could aid in uniform application of any policy and management changes recommended as a result of this study.

Single manager for Army Retail Logistic Systems Management. The USA Logistics Evaluation Agency has completed a study on a single manager for Retail Logistic Systems. This study was initiated by the DA DCSLOG as a result of the Chief of Staff, Army (CSA) Manpower Utilization and Management Survey which found the DA DCSLOG staff involved in micro management of Retail Logistics systems and recommended the DA DCSLOG establish/designate a single functional manager for retail logistics systems. The study was conducted in coordination within the ARSTAF and applicable MACOM's. The draft report recommends establishment/designation of a Field Operating Agency (FOA) as the single manager for retail logistics STAMMIS life-cycle systems being staffed. If approved, the FOA will have functional and systems design responsibility for all retail logistic STAMMIS systems. It is anticipated that upon approval of the draft study report, action would be initiated to form the FOA which would consist of approximately 600 professional and support military and civilian personnel positions. These positions would be gained from the USALOGC (150-165), CSCSGL (400-420), USATSA (20-25), and ODCSLOG.

POST-DEPLOYMENT SOFTWARE SUPPORT (PDSS)

A. The Post-Deployment Software Support (PDSS) Concept Plan for Battlefield Automated Systems is a DARCOM initiated study and plan. It addresses that part of the overall system support necessary to sustain a deployed system's computer software in an operational condition.

B. The PDSS concept plan primarily addresses PDSS and TRADOC requirements for PDSS-related functions. It proposes 11 centers within DARCOM, TRADOC, and CSC for performing PDSS. INSCOM and ACC are encouraged to establish comparable facilities, where possible, for their systems.

C. The concept plan recognizes the close and continuous relationship which must exist between the combat and materiel developer throughout the system's life cycle.

D. DARCOM initiated the PDSS study in May 1978. The proof copy of the final PDSS Plan was distributed within HQ, DARCOM in late April 1980. It was briefed to the commander, DARCOM in Mid-May and approved as a concept. The plan will be forwarded to HQ, DA upon resolution of internal DARCOM resource questions.

E. The PDSS Concept Plan does not directly impact on this study. If the PDSS concept plan were approved and implemented, as is, and the SAACFAAC resulted in realignment of USACSC there would be some adjustment required since USACSC at the Melpar building and the support group at Fort Lee are both designated as PDSS Centers.

DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT CHIEF OF STAFF
FOR AUTOMATION AND COMMUNICATIONS
WASHINGTON, D.C. 20310

DAAC-ZA 30 July 1979

MEMORANDUM THRU DIRECTOR OF THE ARMY STAFF

FOR VICE CHIEF OF STAFF, US ARMY

SUBJECT: OACSAC Performance Criteria

1. You asked me to provide you some criteria by which you could judge the performance of OACSAC. This is my response.

2. By CSR 10-29, the ACSAC "is responsible to the Chief of Staff for overall coordination of the automation and communications activities of the Army." These activities are pointed toward the development of an automation-communications (teleprocessing) network which will satisfy the Army's needs in peace and war. Therefore, I interpret my mission to be:

> "To supervise the development of a worldwide Army teleprocessing network which will satisfy the Army's needs in peace and war."

3. To accomplish this mission I must successfully perform four basic, continuing tasks; each of which is critical to the success of the ACSAC.

a. Plan and discipline the network to meet Army needs. This means rationalize all of the parts into the whole; create a network master plan; identify gaps, overlaps, needed improvements; challenge requirements on a "risk vs. affordability" basis; and insure, as required, interoperability with networks of other services, other government agencies, and other nations.

b. Coordinate and integrate the research, development, test, acquisition, fielding, operation, and maintenance of each element of the network to insure consistency and viability of the network at all times. Individual elements fall into three categories: Hardware (facilities and equipment); software (functional information systems); and procedures (standards, protocols, interfaces, frequency allocation, etc.).

AD-A088 472 ASSISTANT CHIEF OF STAFF FOR AUTOMATION AND COMMUNICA--ETC F/G 15/5
ALIGNMENT OF AUTOMATION AND COMMUNICATIONS FUNCTIONS OF ARMY AG--ETC(U)
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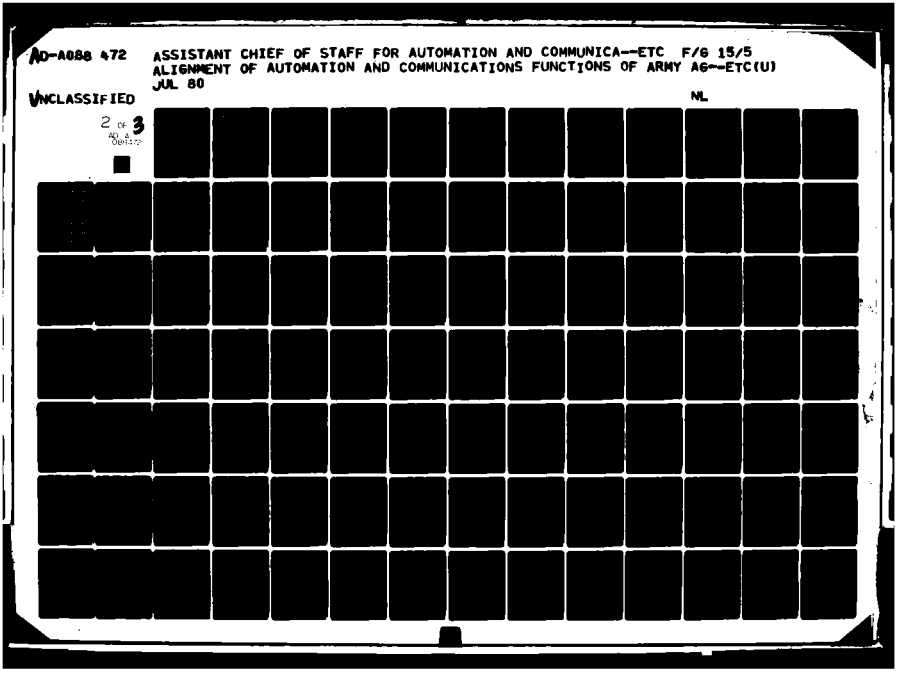


DAAC-ZA 30 July 1979
SUBJECT: OACSAC Performance Criteria

c. Acquire resources to support development of the network. This means programming, budgeting, and defending the manpower and money required to support each element of the network.

d. Articulate the network concept. This means gaining the support of the MACOMs, ARSTAF, Army Secretariat, OSD, OMB, GSA, and Congress in the development of a teleprocessing network truly supportive of the Army's needs in peace and war.

4. You should judge my performance on how well I accomplish these major tasks, each of which is ongoing and is a composite of hundreds of individual actions. Right now our primary efforts appear to be in defending the FY 80 budget (Congress), the FY 81-85 program (OSD and ARSTAF). I must assume that these are balanced, defensible programs. I will find out as we get deeper into the fundamental task (3a above) of planning and disciplining the network.

Clay T. Buckingham

CLAY T. BUCKINGHAM
Major General, GS
Assistant Chief of Staff for
Automation and Communications

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF STAFF
WASHINGTON, D.C. 20310

DACS-DPD
SELCOM MEMO 79-156

27 December 1979

MEMORANDUM FOR MEMBERS OF THE SELECT COMMITTEE

SUBJECT: Teleprocessing Network SELCOM - Minutes of Meeting

1. The VCSA opened the meeting at 1515 hours, 26 November 1979. Principal attendees were (alphabetically by rank):

GEN Vessey, VCSA	MG Read, ACE
LTG Gregg, DCSLOG	MG Scott, ADCSOPS
LTG Otis, DCSOPS	MG Wagner, ODCSRDA
LTG Pixley, TSG	BG Temple, NGB
LTG West, COA	BG Maloney, ODCSRDA
LTG Yerks, DCSPER	BG Wright, DAB
MG Berkman, CAR	Mr. Zimmerman, OACSAC
MG Buckingham, ACSAC	Mr. Hamilton, PAED
MG Greer, DM	Mr. Wallace, OASA(IL&FM)
MG Lawrence, C,AFMCO	Mr. Taylor, OACSI

2. MG Buckingham, the ACSAC, presented the briefing and opened by indicating that he had asked the VCSA for the opportunity to present to the SELCOM his views on the ACSAC's role. He also indicated the desire to obtain agreement ("defacto as well as dejure") from the SELCOM on that role. The charts used in the briefing were those provided in the read-ahead package, SELCOM Memo 79-136, dated 21 November 1979. The following is a summary of the discussion highlights:

a. The COA indicated agreement with all that was presented. He stated that tying together all communication and automation systems was a tough job, and that the ACSAC position was created to provide an extra dimension necessary to coalesce all of the various aspects of communication and automation. He also indicated his support whenever necessary.

b. The DCSLOG added that the teleprocessing network as presented was a step in the right direction to bring order to a complex process. He indicated much progress has been made to date but cautioned that as we introduce more ADP/Communications hardware we continue the same Integrated

Logistics Support (ILS) scrutiny we apply to other hardware developments/ acquisitions. He voiced concern that there is a great temptation to use contractor support for the maintenance of our systems. The Army must insure that our wartime systems are supportable by "green suiters". He added that both he and the ACSAC are in agreement on this important aspect.

c. With respect to networks, the VCSA cautioned that the Army must be careful not to get totally boxed in by them. The Army must not build networks where they are not necessary. It is important to recognize networks and all of their interfaces, but it is also necessary not to go too far with them. The VCSA also recalled the painfully slow progress and large expense associated with systems such as TACS/TADS, GAMD, and JINTACS. He discussed the background of the TACFIRE requirement and program and indicated a need to not miss the many opportunities for smaller and cheaper processors. When appropriate, the Army must take advantage of the inexpensive, small, and fast stand-alone systems that will do the job. Do not create networks that are not needed. The ACSAC agreed and also cautioned that there is the tendency to over-automate. He used an example of starting with a small stand-alone system for some specific task; next we want it to communicate with other systems; then we add functions just because the system is there. He added that we are improving and have come a long way regarding senior officer recognition of automation communications problems -- three years ago we could not even have had a meeting/discussion like this one.

d. The DCSPER indicated that the SELCOM, as a body, should accept and support this as the Army's network. To do this we must be prepared to support it with funds and positive votes in program and budget meetings. If the SELCOM supports a system, then it must put up the funds. Raids on the network are raids on the proponents systems, not the ACSAC's systems. The ACSAC added that even if he is the network coordinator, the functional managers must understand the network and defend their systems within the network that are in trouble with Congress or OSD. He also stated that in the DPS process both TACSATCOM and Joint Crisis Management System are being hurt by OSD.

e. The DM pointed out that there is another action on "management of information." It includes the management of all information, not just that associated with computers. The effort is designed to produce a central data base of information all managers can use so the Army speaks with one voice in testimony, etc. We are still sorting out who will be in charge of this effort. The VCSA added the Army has a similar problem in its field exercises -- the proliferation of information. We tend to send all information to everyone where we need to sort out what information is needed where and then only that information is sent to the appropriate users.

f. The DAB indicated that in the programing and budgeting process the functional managers need to determine what the needs are and then the ACSAC should review and prioritize these items. The DCSOPS disagreed. He indicated that the functional manager must justify the needs, the ACSAC coordinates and finds the most economical way to satisfy (looks for optimum common solutions where possible) and then the DCSOPS prioritizes the satisfaction of these needs with final SELCOM approval. The VCSA added that ACSAC recommendations should be included. The ACSAC indicated that when it comes to prioritization the DCSOPS will have to take a broader view in the future. In the past most emphasis was given to the tactical systems and not as much to the non-tactical items in the network. In order to do that the DCSOPS indicated that the requirements that now flow through the Army Communication Command, the Computer Systems Command and others shown on Chart 25 must somehow be filtered through the DCSOPS. The DM indicated that the ACSAC would be studying computer and communications agencies below DA to see whether reorganization changes are needed (task that was generated at the 1978 C^3 Conference that led to the establishment of the OACSAC). The DCSLOG suggested that a committee of the functional directors, chaired by the DCSOPS, do the prioritization with disagreements resolved by the SELCOM. The DCSOPS agreed. The VCSA reminded the SELCOM that DCSOPS had been tasked to develop the prioritization plan for POM 82-86 and present a proposal at the 6 December 1979 SELCOM.

g. The Director of Combat Support Systems, ODCSRDA, reminded the SELCOM of the importance of the Army speaking with one voice in our program and budget negotiations, discussions, and testimony with our OSD counterparts. The VCSA agreed and indicated this was especially true in the C^3I arena. Here he indicated that DCSRDA, ACSI, and ACSAC must be coordinating very closely. He added the same is true in the personnel and logistics areas.

h. The ADCSOPS asked if any of this network analysis would impact what was already approved for the Army Command and Control Master Plan (AC^2MP). The ACSAC answered that the AC^2MP was a master plan for C^2; that it did not address the logistics and personnel systems etc. It focuses from the battlefield back to the NCA; the AC^2MP was actually a subset of the whole auto-comm network. He also added that the network master plan would not be a large written document but rather a compendium of sub-networks rationalized to make them fit together properly.

i. The C,AFMCO said that the message to the SELCOM appears to be that a large number of resources are being expended in this area; there are many systems, much overlap, and some redundancy. The Army must optimize to save resources. The ACSAC added that was his number one mission; to plan and discipline the network. The COA indicated that the functional managers can not operate in their own worlds without looking at and understanding the entire network -- they must avoid overlap and redundancy.

DACS-DPD
SUBJECT: Teleprocessing Network SELCOM - Minutes of Meeting

j. The VCSA reminded the SELCOM that the Army does not command the fighting forces, the specified and unified commands do. The AC^2MP must provide support for the service role, which is personnel and logistics -- not command and control, which is the joint system. AC^2MP support joint commands. The Army provides the Corps to those commands and supports the units of those Corps. Therefore the Army's command and control system must be broad enough to include all of that support (i.e. pay, personnel flow, logistics, etc.).

k. The ACE voiced concern that we may not be able to take advantage of the many "mini" computers that show promise. The Army must draw the line between over and under centralization. The ACSAC added that as the Army looks at these stand-alone items, it must be sure the capability does not already exist within the network. The VCSA cautioned that one-time needs do not create the necessity for a network. The COA added that there are great applications for the stand-along items.

l. The DCSOPS indicated the necessity for someone to be able to say "no". The role of the functional manager is to surface the needs. The filter for those needs is in DCSOPS. The ACSAC evaluates the need and determines whether it can best be satisfied by a new system, new hardware, new software or superimposition on existing systems. We have to allow the ACSAC to say "no" and the DCSOPS would support that decision. The VCSA added that the functional managers have to say "no" also. They must question their needs. The ACSAC will discipline the network and rationalize its parts. One "no" will not carry the day -- ACSAC needs support from others.

3. The ACSAC asked if he had defacto as well as dejure agreement on his role in the network process. The VCSA answered that he did with the addition of all the comments he received from the SELCOM membership.

4. The meeting adjourned at 1625 hours.

FOR THE CHAIRMAN:

/s/ Thomas E. Bentley

RONALD W. LIND
Major, GS
Secretary, SELCOM

The Signal Corps, which was created in the Civil War, was by the 1980's one of several War Department Bureaus (Adjutant General Department, Quartermaster Department, Pay Department, Medical Department, Corps of Engineers, Ordnance Department and Signal Corps). These bureaus reported directly to the Chief of Staff. In both WWI and II, due to the magnitude of management, they were subordinated. In WWII, Signal Corps was under the Army Services Forces.

Following this war, the Office of Chief Signal Officer (OCSigO) remained a member of the Special Staff. Prior to the 1962 reorganization which drastically reduced the size of the Army Staff, OCSigO reported to DCSLOG. For RDT&E, OCSigO reported to Chief of Research and Development with the creation of US Army Materiel Command, and Combat Development Command, OCSigO lost its acquisition, and support functions and remained on the staff as OCSigO, and reported to DCSOPS. In 1962, the Chief Signal Officer lost his legal statutory position. In 1967, OCC-E became the ACSC-E again reporting to the Chief of Staff, but without the same power as a Deputy Chief of Staff. In 1974, the reorganization of the Army Staff in another drastic reduction in personnel occurred and the ACSC-E functional aspects were assigned to DCSOPS.
This was a Directorate level along with the DCSOPS C2 functions. Requirements Directorate of DCSOPS at this time assumed the function of materiel requirements.

The merger of automation and communications in the Army Staff had been proposed by the old OCC-E. However, this was not done until ACSAC was formed in October 1978. With authority for plans, policy, and programming in its arena, the functions of predecessor organizations, such as OCSigO, OCC-E, ACS-CE which by this time had been included and embodied in the other elements of the Army Staff such as DCSRDA, DCSOPS, etc., or in major commands were not assigned to Defense Agencies, were not affected by this last reorganization.

AR 18-7, Data Processing Activity Management, procedures, and standards, establishes management standards and policies, and prescribes administrative and operating procedures for Department of the Army and Army Contractor operated Data Processing Activities.

AR 18-7 provides basic guidance on the administration of DPA activities, including budgetary operations and procedures to ensure maximum cost effectiveness. It also provides guidance for development of a DPA Continuity of Operations Plan (COOP), for management of computer operations, for maintenance management, and establishes standards for development, implementation, and maintenance of application software systems.

AR 18-7 also establishes procedures for determining availability, screening, acquisition reporting and disposal of excess ADPE through the Army and DOD ADPE reutilization program.

DA PAM 18-4, DPI Review/Evaluation checklist, assists managers in achieving better operational practices by providing them with a series of questions designed for self-evaluation of most aspects of DPA management.

DA PAM 18-7, DPI Management Guide provides detailed supplementary information of an advisory nature. It is intended for use as a DPA manager's handbook for daily operation.

AR 105-1. TELECOMMUNICATIONS MANAGEMENT

This regulation implements DOD Directive 5135-1 within the Army. It establishes responsibilities, policies, and procedures for management, supervision and coordination for management, supervision and coordination of US Army Communications. Proponent is the ACSAC.

AR 105-22. TELECOMMUNICATIONS REQUIREMENTS PLANNING, DEVELOPING AND PROCESSING

This regulation prescribes the submission, validation and approval of telecommunications requirements, states the policy and procedures related to a standardized economic analyses, and establishes the policy and procedures for the acquisition of ADP software and equipment for automated Telecommunications Systems and services system requirements.

Planning activities require preparation of two long-range plans, the DCS plan and the DA Telecommunications Plan (DATEP) and two short-range plans, the DCS Five Year Plan Program and the Army Telecommunications Combat Theater and General Support Five Year Plan (ATCOGS). Additionally, the Army Mobilization Planning requires submission of telecommunication requirements and requests for services in conjunction with mobilization.

The regulation is applicable to planning for the non-tactical services of Air Defense, detail transportables, cryptologic and intelligence communications, Alternate National Military Command Center (ANMCC), non-DCS Strategic Army Communications (STARCOM), Army portion of DCS, Minimum Essential Emergency Communications Network (MEECN), AUTODIN, Satellite Communications, COMSEC, BASELINE, Federal Telecommunications (FTS), Mobilization Telecommunications Requirement Services. DA Command and Control System (DACCS), Air Traffic Control (ATC), Army Radio and Television outside plant transmission facilities, communications requirements in support of Army Management Information System Master Plan (AR 18-1), government owned & leased long-haul service. WWMCCS, tested by RDTE facilities are not included. After a requirement is validated, procedures begin to acquire and install the equipment. All requirements are typed, classed, and prioritized by commands. A Telecommunications Requirement (TELER) is prepared and serves as the basis for planning, programming, and budgeting for equipment. Approval authority is different for each class which is classified by dollar values.

Technical validation is performed by USACC. After equipment is installed it is documented through the Army Authorization Document System (VTAADS). USACC is responsible for engineering the project to include translation of requirements into a specific system, conforming with standards, interfacing available hardware and facilities, preparation of plant-in-place records/drawings and identification of site preparation and construction. Logistical and maintenance plans, either in-house or contract, are specified at the same time as the requirements are identified.

The proponent for this regulation is the Commander, US Army Communications Command.

AR 105-23. ADMINISTRATIVE POLICIES AND PROCEDURES FOR BASE TELECOMMUNICATION SERVICES

AR 105-23 prescribes policies, responsibilities, and administrative procedures for obtaining base telecommunications services at Army installations and other DA activities. It establishes procedures and responsibilities for the receipt and payment of bills for base telecommunication services. The Army generally acquires base telecommunications services including equipment and facilities incidental to those services from within Army sources or from commercial common carriers at eatablished commercial rates.

Communications services included are:

(1) Installation/activity telephone services.

(2) Facsimile Services

(3) Federal Telecommunications Service (FTS)

(4) Foreign Exchange (FX) Services

(5) Wide Areas Telecommunications Services (WTS)

(6) Telephone directories

(7) Commercial telephone service

The proponent for this regulation is USACC.

AR 105-10 - Communications Economy and Discipline. Prescribes policy, administrative and management practices to promote the optimum use and cost effectiveness of telecommunications services provided by the Army. Proponent is USACC.

AR 105-11 - Unofficial Telephone Service at Department of Defense Activities. Prescribes the policy for the sale of official telephone services to unofficial users within, or in the immediate vicinity of DOD activities, an Army installation/activity as prescribed in DOD Directives 4640.3. Proponent is the ACSAC.

AR 105-17 - Non-tactical Telecommunications Facilities Standard Operating Procedures. Prescribes the policy and responsibilites for the standardization of operating procedures at all Army non-tactical telecommunications facilities. Proponent is USACC.

AR 105-20 - Acquisition Policy for Cable Television (CATV) Systems on Army Installations. Delineates the policy for the use of and requirements for cable television systems, to include the technical standards pertaining to such services. Proponent is the ACSAC.

AR 105-31 - Record Communications. Prescribes the procedures for the preparation of official messages, to include the responsibilities of the originator, drafter, and releaser of official messages. Proponent is USACC.

AR 105-32 - Authorized Addresses for Electrically Transmitted Messages. Prescribes and lists the abgreviated addresses to be used when preparing messages for transmission to military personnel and organizations. Proponent is the AG.

AR 105-34 - Reduction and Control of Telecommunications Traffic in an Emergency (MINIMIZE). Prescribes the policy, responsibilities, and procedures for controlling the use and volume of all Army telecommunications services during an actual or simulated emergency. The proponent is the ACSAC.

AR 340 Series - Administrative Systems Management

a. The Adjutant General (TAG) is the principal advisor to the Chief of Staff for Army Administrative Systems, administrative systems development, and the US Army Reserve personnel and administrative systems. In the broad generic functional area of administrative systems the Adjutant General is thus the focal coordinating point for all matters dealing directly with or impacting upon administrative systems, including automation and communications. TAG is responsible for managing the acquisition, use, inventory, and disposition of **automation** resources employed in Army administrative systems. As the functional proponent for Army administrative systems, TAG has a large concern with Army and Automation policy. Administrative processes cut across traditional functional areas. (For example, computer output microfiche is an administrative technique which supports many functional areas just as the records management system which serves various functional areas). As the functional proponent for such systems TAG is responsible for establishing the policy under which administrative systems are managed whether or not they embody automation.

b. To provide adequate management over administrative support systems, TAG or his counterpart at MACOM or below, must evaluate any automation requirement which includes an administrative support capability. This evaluation is to insure that such administrative functions as the collection, dissemination, storage, retrieval, control, and disposition of information are efficient and necessary to the processes they support.

c. Word processing (WP):

(1) Word processing systems are classified in accordance with cost and complexity of the system. Documentation requirements are based upon the class of system.

(2) WP systems:

a. Class 1 - $100,000 or more
b. Class 2 - $20,000 to $100,000
c. Class 3 - $20,000 or less

(3) Review and approval authority:

a. Class 1 Systems - HQDA
b. Class 2 Systems - MACOM
c. Class 3 Systems - General Officer **Command, Installation** Commanders, and heads of field operating agencies.

d. **Micrographics:**

(1) Systems Class

I - $10,000 or less
II - $25,000 or less
III - $50,000 or less
IV - $50,000 or more

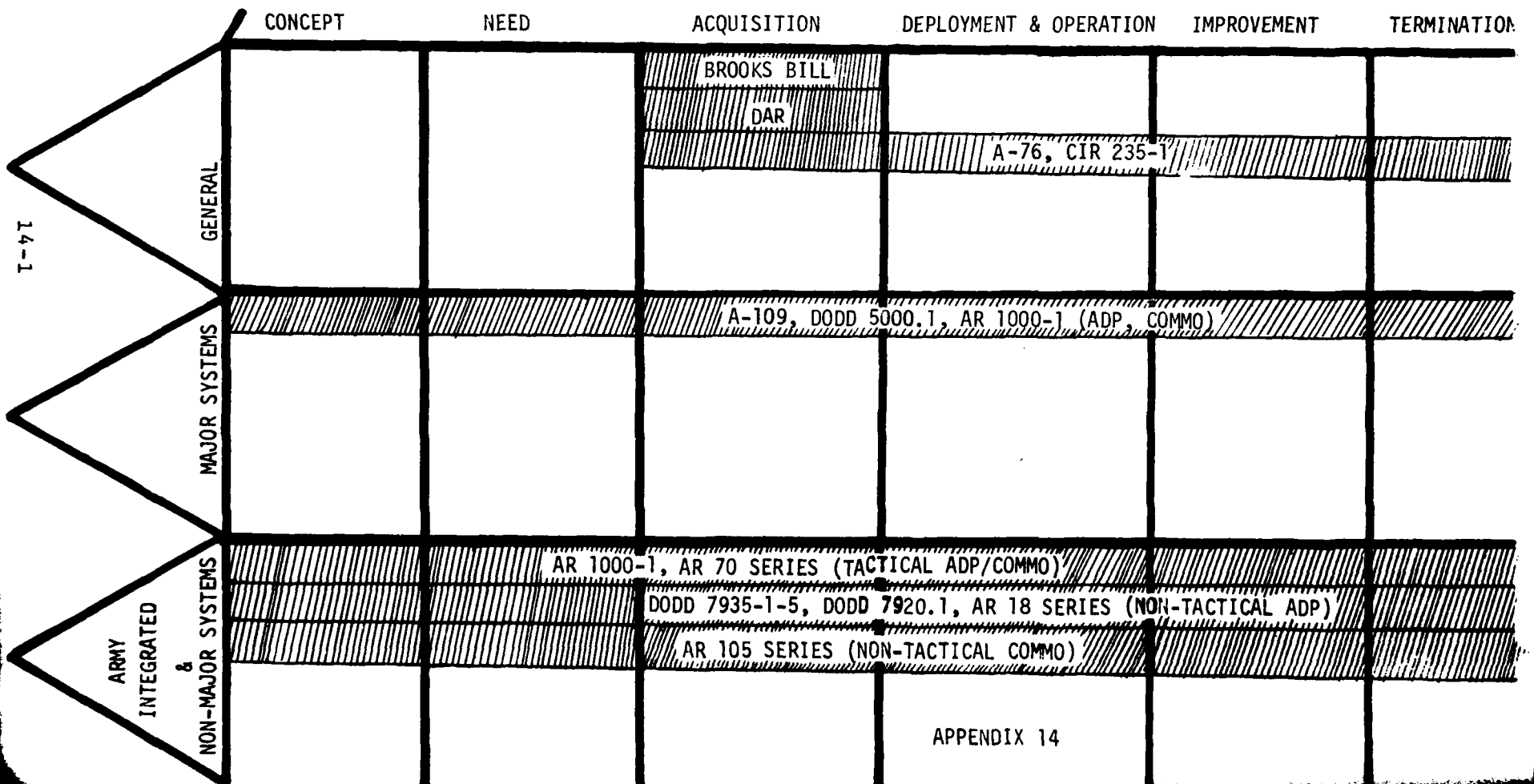
(2) Approval authority:

Class I - Installation Level
Class II - MACOM
Class III - MACOM
Class IV - TAG

AUTOMATION/COMMUNICATION

MANAGEMENT POLICY

SYSTEM LIFE CYCLE



AR 1000-1. "BASIC POLICIES FOR SYSTEMS ACQUISITION"

a. General. This regulation establishes materiel acquisition policy for the Army and implements DODD 5000.1. As of 19 March 1980, a new DODD 5000.1 has been published and AR 1000-1 is currently under revision. The following represents current Army Policy.

b. AR 1000-1 establishes four levels of materiel acquisition:

(1) Major Program. Major programs are governed by DODD 5000.1, reviewed by the Army Systems Acquisition Review Council (ASARC), and Defense Systems Acquisition Review Council (DSARC); milestone decisions are made by the Secretary of Defense (SECDEF).

(2) Army Major Programs. The terms is being revised (probably to Designated Acquisition Programs) to eliminate the word "major" milestone decisions are made by the Secretary of the Army.

(3) DA IPR System. These programs are governed by AR 1000-1, reviewed by IPR in the field, and the milestone decisions are approved by HQDA, Deputy Chief of Staff for Research, Development & Acquisition (DCSRDA).

(4) IPR System. These programs are governed by AR 1000-1, reviewed by IPR, the milestone decisions are approved by the Materiel Developer.

c. AR 1000-1 is not applicable to automatic data processing equipment, services, or supplies that come under the purview of AR 18-1.

d. Milestone Decisions and phases of activity are the same as defined in DODD 5000.1. However, for IPR systems, only Milestone II and III may be applicable.

e. Documentation for milestone decisions has not yet been determined as AR 1000-1 is currently being updated to reflect the new DODD 5000.1. The proponent of this regulation is the Office of the Deputy Chief of Staff for Research, Development and Acquisition, (ODCSRDA), HQDA.

f. Standardization policy for embedded computer resources (ECR) being included in the update to AR 1000-1. Standardization policy for ECR is described below.

(1) ECR planning for all battlefield automated systems (BAS) will:

A. Be coordinated with DARCOM (DRCDE-C).
B. Minimize:
1. Types of computers on the battlefield.
2. Software support requirements.
3. Assembly language programming.

(2) DOD-approved high order programming languages (HOL)(see DODI 5000.31) will be used in all BAS. DOD is developing a common programming language--ADA. Ada will be used in all BAS fielded after December 1982.

(3) A standard instruction set architecture (ISA) will be adopted in 1981. This ISA will be used in all BAS entering development after 1982.

(4) A military computer family (MCF) is being developed. All BAS entering FSD after 1983 will use MCF.

(5) Waivers to this policy will be based upon cost-effectiveness or technical practicality.

A. Requests for waiver will be submitted to Commander, DARCOM (DRCDE-C). Commander, DARCOM may either:

1. Disapprove the waiver.
2. Recommend approval of the waiver to HQDA (DAMA-PPM).

B. DCSRDA will staff wavier requests with ACSAC and other ASARC members. If all ASARC members agree on the waiver, DCSRDA will approve it for the ASARC Chairman. ACSAC (DAAC-PE) will maintain a record of all approved waivers.

OMB CIRCULAR A-109 "MAJOR SYSTEMS ACQUISITIONS"

A-109 establishes national policy for major system acquisitions. It requires that needs must be expressed in mission terms. The agency head (SECDEF for DOD) must approve the need prior to examining alternative solutions. After the need approval, competitive exploration of solutions will be pursued. Key decision points will be established for the agency head (SECDEF). Testing of the systems will be conducted by an element which is independent of the developer and the user; only SECDEF may approve exceptions for major systems. A-109 encourages flexibility and recommends tailoring of an acquisition strategy for each program.

DODD 5000.1 "MAJOR SYSTEMS ACQUISITION"

a. General. This directive implements A-109 for the Department of Defense and applies to the acquisition of major systems. The principles should also be applied, where appropriate, to the acquisition of systems not designated as major. Responsibility for the management of system acquisition programs shall be decentralized to DOD components except for specific decisions retained by the Secretary of Defense.

b. Analysis of Mission Areas. As part of the routine planning for accomplishment of assigned mission, DOD components shall conduct continuing analyses of their mission areas to identify current or projected deficiencies in capability of more effective means of performing assigned tasks. During these on-going analyses, a deficiency may be identified that could lead to initiation of a major system acquisition program.

c. Alternatives to New System Development. A system acquisition may result from a deficiency in an existing system, a decision to establish new capabilities in response to a technologically feasible opportunity, a significant opportunity to reduce the DOD cost of ownership, or in response to a new emphasis in defense. Development of a new system may be undertaken after assessment of alternative system concepts including: change in tactical or strategic doctrine; use of existing military or commercial systems; or modification or product improvement of existing systems.

d. Designation of Major Systems. The decision to designate any system as major may be based upon: development risk, urgency of need to other items of interest to the Secretary of Defense; joint acquisition of a system by the Department of Defense and representatives of another nation or by two or more DOD components; the estimated requirement for the system's research, development, test and evaluation, and procurement funds; the estimated requirement for manpower to operate, maintain, and support the system in the field, or Congressional interest.

e. Milestone Decisions and Phases of Activity. The Secretary of Defense shall make the milestone Decisions on Major systems. Four milestone decisions and four phases of activity comprise the normal DOD acquisition process.

(1) Milestone 0 Decision. Approval of MENS and authorization to proceed into Phase 0 -- Concept Exploration -- which includes solicitation, evaluation, and competitive exploration of alternative system concepts. Approval to proceed with concept exploration also means that the Secretary of Defense intends to satisfy the need.

(2) Milestone I Decision. Selection of alternatives and authorization to proceed into Phase I -- Demonstration and Validation.

(3) Milestone II Decision. Selection of alternative(s) and authorization to proceed into Phase II -- Full Scale Development -- which includes limited production for operational test and evaluation. Approval to proceed with Full Scale Development also means that the Secretary of Defense intends to deploy the system.

(4) Milestone III Decision. Authorization to proceed into Phase III -- Production and Deployment.

f. Documentation for Milestone Decision.

(1) Milestone 0. Mission Element Need Statement (MENS). Each major system acquisition program requires a MENS approved by the Secretary of Defense. DOD Components shall prepare MENS to document major deficiencies in their ability to meet mission requirement. Joint MENS shall be prepared to document major deficiencies in two or more DOD Components.

(2) Milestone I, II, and III.

A. Decision Coordinating Paper (DCP). The DCP provides basic documentation for use by Defense Systems Acquisition Review Council (DSARC) members in arriving at a recommendation for the Secretary of Defense. It includes: a program description, revalidation of the mission needs goals and thresholds, a summary of the DOD component's acquisition strategy, (including a description of tailoring a standard procedures), system and program alternatives, and issue affecting the decision.

B. Integrated Program Summary (IPS). The IPS summarizes the DOD Component's acquisition planning for the system's life cycle and provides a management overview of the program.

(3) Milestones 0, I, II and III. Secretary of Defense Decision Memorandum (SDDM). An SDDM documents each milestone decision, establishes program goals and thresholds, reaffirms established needs and program objectives, authorizes exceptions to acquisition policy (when appropriate), and provides the direction and guidance to OSD, OJCS, and the DOD Component for the next phase of acquisition.

Public Law 89-306
89th Congress, H. R. 4845
October 30, 1965
AN ACT

79 STAT. 1128

To provide for the economic and efficient purchase, lease, maintenance, operation, and utilization of automatic data processing equipment by Federal departments and agencies.

Automatic data processing equipment. Purchase and utilization. 5 USC 630-630g-1.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That title I of the Federal Property and Administrative Services Act of 1949 (63 Stat. 377), as amended, is hereby amended by adding a new section to read as follows:

"AUTOMATIC DATA PROCESSING EQUIPMENT"

"SEC. 111. (a) The Administrator is authorized and directed to coordinate and provide for the economic and efficient purchase, lease, and maintenance of automatic data processing equipment by Federal agencies.

"(b)(1) Automatic data processing equipment suitable for efficient and effective use by Federal agencies shall be provided by the Administrator through purchase, lease, transfer of equipment from other Federal agencies, or otherwise, and the Administrator is authorized and directed to provide by contract or otherwise for the maintenance and repair of such equipment. In carrying out his responsibilities under this section the Administrator is authorized to transfer automatic data processing equipment between Federal agencies, to provide for joint utilization of such equipment by two or more Federal agencies, and to establish and operate equipment pools and data processing centers for the use of two or more such agencies when necessary for its most efficient and effective utilization.

"(2) The Administrator may delegate to one or more Federal agencies authority to operate automatic data processing equipment pools and automatic data processing centers, and to lease, purchase, or maintain individual automatic data processing systems or specific units of equipment, including such equipment used in automatic data processing pools and automatic data processing centers, when such action is determined by the Administrator to be necessary for the economy and efficiency of operations, or when such action is essential to national defense or national security. The Administrator may delegate to one or more Federal agencies authority to lease, purchase, or maintain automatic data processing equipment to the extent to which he determines such action to be necessary and desirable to allow for the orderly implementation of a program for the utilization of such equipment.

ADP fund, establishment.

"(c) There is hereby authorized to be established on the books of the Treasury an automatic data processing fund, which shall be available without fiscal year limitation for expenses, including personal services, other costs, and the procurement by lease, purchase, transfer, or otherwise of equipment, maintenance, and repair of such equipment by contract or otherwise, necessary for the efficient coordination, operation, utilization of such equipment by and for Federal agencies: *Provided*, That a report of equipment inventory, utilization, and acquisitions, together with an account of receipts, disbursements, and transfers to miscellaneous receipts, under this authorization shall be made annually in connection with the budget estimates to the Director of the Bureau of the Budget and to the Congress, and the inclusion in appropriation acts of provisions regulating the operation of the automatic data processing fund, or limiting the expenditures therefrom, is hereby authorized.

Equipment acquisitions and utilization.

Report to Budget Bureau and Congress.

"(d) There are authorized to be appropriated to said fund such sums as may be required which, together with the value, as determined by the Administrator, of supplies and equipment from time to time transferred to the Administrator, shall constitute the capital of the fund: *Provided*, That said fund shall be credited with (1) advances and reimbursements from available appropriations and funds of any agency (including the General Services Administration), organization, or contractor utilizing such equipment and services rendered them, at rates determined by the Administrator to approximate the costs thereof met by the fund (including depreciation of equipment, provision for accrued leave, and for amortization of installation costs, but excluding, in the determination of rates prior to the fiscal year 1967, such direct operating expenses as may be directly appropriated for, which expenses may be charged to the fund and covered by advances or reimbursements from such direct appropriations) and (2) refunds or recoveries resulting from operations of the fund, including the net proceeds of disposal of excess or surplus personal property and receipts from carriers and others for loss of or damage to property: *Provided further*, That following the close of each fiscal year any net income, after making provisions for prior year losses, if any, shall be transferred to the Treasury of the United States as miscellaneous receipts.

Appropriation.

"(e) The proviso following paragraph (4) in section 201(a) of this Act and the provisions of section 602(d) of this Act shall have no application in the administration of this section. No other provision of this Act or any other Act which is inconsistent with the provisions of this section shall be applicable in the administration of this section.

63 Stat. 384.
40 USC 481, 474.

"(f) The Secretary of Commerce is authorized (1) to provide agencies, and the Administrator of General Services in the exercise of the authority delegated in this section, with scientific and technological advisory services relating to automatic data processing and related systems, and (2) to make appropriate recommendations to the President relating to the establishment of uniform Federal automatic data processing standards. The Secretary of Commerce is authorized to undertake the necessary research in the sciences and technologies of automatic data processing computer and related systems, as may be required under provisions of this subsection.

Scientific and technological advisory services by Secretary of Commerce.

"(g) The authority conferred upon the Administrator and the Secretary of Commerce by this section shall be exercised subject to direction by the President and to fiscal and policy control exercised by the Bureau of the Budget. Authority so conferred upon the Administrator shall not be so construed as to impair or interfere with the determination by agencies of their individual automatic data processing equipment requirements, including the development of specifications for and the selection of the types and configurations of equipment needed. The Administrator shall not interfere with, or attempt to control in any way, the use made of automatic data processing equipment or components thereof by any agency. The Administrator shall provide adequate notice to all agencies and other users concerned with respect to each proposed determination specifically affecting them or the automatic data processing equipment or components used by them. In the absence of mutual agreement between the Administrator and the agency or user concerned, such proposed determinations shall be subject to review and decision by the Bureau of the Budget unless the President otherwise directs."

Notice to agencies.

Approved October 30, 1965.

AR 18-1. "ARMY AUTOMATION MANAGEMENT"

Basic policy governing the management of all Army Automation is contained in AR 18-1. The most recent published version of this regulation, dated 22 March 1976, will be replaced by a new version, now in final draft form. This new version implements DOD Directive 7920.1 and others, and will extend life cycle management concepts now employed in AR 1000-1 to non-major automated system acquisition. Under this new version, detailed instructions implementing the policy contained within the regulation will be promulgated in a series of Technical Bulletins (TB's) in the 18-1XX family. (See Table 1 for the principal TBs).

Under the 22 March 1976 version of AR 18-1, three life cycle phases and associated documentation, are recognized. Phase I, the Systems Planning and Definition Phase, encompasses all documentation and procedures, from concept formulation through requirements formulation. The key documents employed during this phase are the General functional System Requirement (GFSR); the Management Information System Economic Analysis (MISEA); and the Detailed Functional System Requirement (DFSR).

Phase II, the System Development Phase, encompasses all documentation and procedures subsequent to approval of the DFSR through to the prototype documentaion and software; the System Integration Test (SIT) Report; the Prototype Report, and the System Extension Plan.

During Phase III, the System Installations, Execution, and Maintenance Phase, the system is extended, operated and maintained until the entire system is phased out.

The new life cycle under the draft version of AR 18-1 recognizes five distinct phases; project initiation, concept development, definition/design, system development, and deployment. Project Initiation commenses with the establishment of a Mission Element Need Statement (MENS). The Automation MENS, like the Major System MENS is based on a need. During the Concept Development Phase, various alternatives to satisfy the MENS are considered, and one or more feasible concepts for further exploration are recommended. Each concept must be supported by a detailed economic analysis. This phase also results in the initiation of the System Decision Paper (SDP), which forms the basis of the system documentation package. The SDP remains with the system throughout its entire life and is itself a living document.

The purpose of the Definition/Design phase is to select the single best alternative available to satisfy the mission shortfall. Approval of the SDP during this phase initiates the System Development Phase, which develops, integrates, tests, and evaluates the sub-systems and the total system. Approval of the final system by the appropriate functional officials results in the issuance of approval to deploy and operate the system.

During the Deployment phase, the systems are deployed to operational sites, and all changes to the system are controlled through the use of detailed configuration management procedures.

The levels of approving authority are reflected in Table 3. The proponent of this regulation is the Office of the Assistant Chief of Staff for Automation and Communicatons (OACSAC), HQDA.

TECHNICAL BULLETINS IN SUPPORT OF

ARMY REGULATION 18-1

TB 18-100	Life Cycle Model and Requirements Documentation
TB 18-101	Army Automation Planning, Programming, and Evaluation System
TB 18-103	Software Design and Development
TB 18-104	Testing of Systems
TB 18-105	Scientific & Engineering Systems
TB 18-106	Deployment, Operations, and Termination
TB 18-109	Economic Analysis
TB 18-110	Configuration Management
TB 18-111	Technical Documentation
TB 18-112	Training Management
TB 18-114	Performance Measurement and Evaluation
TB 18-115	Army Information Processing Standards
TB 18-116	Resource Estimating Techniques
TB 18-122	Software Conversion Planning

TABLE 1

ADP EQUIPMENT AND SUPPORT SERVICES ACQUISITION

ARSTAF/MACOM MAY APPROVE: [1]	ASA(IL&FM) APPROVES:
Competitive [2] acquisition of: - General Purpose ADPE costing less than $300,000 purchase - General Purpose ADPE costing less than $7,500 monthly rental - Scientific and Engineering ADPE costing less than $500,000 purchase or $200,000 annual rental - ADP support services costing less than $500,000 annually per requirement Noncompetitive [2] acquisition of: - ADPE costing less than $50,000 purchase - ADPE costing less than $1,500 monthly rental ADP support services costing less than $50,000 annually per requirement	- Acquisition of more than one computer [3] - All acquisition of ADPE and ADP support services not delegated to the ARSTAF/ MACOM - Modernization, upgrade, replacement, or augmentation of ADPE originally approved by ASA(IL&FM)

1 ARSTAF/MACOM may redelegate up to $20,000 to general officer subcommands.

2 See FPR 1-4.1108 for definition of competitive and noncompetitive.

3 Applies to computers having 4,000 or more bytes or equivalent words of memory.

TABLE 2

AUTOMATED INFORMATION SYSTEM	CRITERIA**	LEADERSHIP		MISSION ELEMENT NEED STATEMENT (MENS-MILESTONE ZERO)			SYSTEM DECISION PAPER (SDP-MILESTONES I, II, III)				
		TYPE	APPOINTED BY	HQDA STAFF COORD	APPROVED BY:		HQDA STAFF COORD	REVIEW FORUM		APPROVED BY:	
					ARMY	OSD		ARMY	OSD	ARMY	OSD
CLASS I*	DESIGNATED BY SECDEF	PROGRAM/ PROJECT MANAGER	SECARMY	DCSOPS	SECARMY	SECDEF	DCSRDA	ASARC	OSARC	SECARMY	SECDEF
CLASS II	DEV TOTAL - $100+M ONE YEAR - $25+M OR DESIGNATED BY OSD	PROJECT MANAGER	SECARMY	DCSOPS	HQDA SENIOR FUNCTIONAL POLICY OFFICIAL	OSD FUNCTIONAL POLICY OFFICIAL	ACSAC	HQDA IPR	OSD REVIEW PANEL	ASA(IL&FM)	OSD PRINCIPAL
CLASS III	$5M TO $100M OR DESIGNATED BY OSD	PRODUCT MANAGER	HQDA SENIOR FUNCTIONAL POLICY OFFICIAL	HQDA FUNCTIONAL PROPONENT		NONE	HQDA FUNCTIONAL PROPONENT	HQDA IPR	NONE	ASA(IL&FM)	NONE
CLASS IV***	$100K TO $5M	PRODUCT MANAGER/ PROJECT OFFICER	MACOM CDR/ ARSTAF HEAD	AS DIRECTED BY MACOM/ARSTAF							
CLASS V****	LESS THAN $100K	AS DIRECTED BY MACOM/HQDA									

*THESE SYSTEMS MANAGED IAW AR 1000-1 AND AR 70-1.

**COSTS INCLUDE FUNCTIONAL, TELECOMMUNICATION, AND ADP COSTS ATTRIBUTABLE TO THE SYSTEM FROM MILESTONE 0 THROUGH DEPLOYMENT TO ALL INITIAL SITES.

***ACQUISITION OF ADPE AND SUPPORT SERVICES MAY REQUIRE APPROVAL BY ASA (IL & FM) IAW TABLE 4-2.

****HQDA AGENCIES SERVICED BY DA22 WILL COORDINATE CLASS V SYSTEMS WITH THE HQDA OFFICE SYSTEMS PLANNING GROUP.

TABLE 3

OMB Circular A-76 "Policies for Acquiring Commercial or Industrial Products and Services for Government Use"

a. A-76 establishes the policies and procedures to determine whether needed commercial or industrial type work should be done by contract or in-house using Government facilities and personnel. This circular is applicable to all government agencies and states that "no executive agency will engage in, or contract for, commercial or industrial activities except in accordance with the provisions of this Circular". The policy provided builds on three equally valid (policy) precepts:

(1) Rely on the Private Sector

(2) Retain Certain Governmental Functions In-House

(3) Aim for Economy; Cost Comparisons

b. Government agencies may engage in operation of a commercial or industrial activity provided it can be shown that one of the following conditions exists:

(1) No satisfactory commercial source exists.

(2) The project is determined to be within the confines of National Defense whose critieria has been approved by the Secretary of Defense.

(3) Government cost for providing product or service can be shown, by comparative cost analysis, to be lower than the commercial cost.

*CSR 10-29

CHIEF OF STAFF REGULATION)
NO. 10-29)

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF STAFF
WASHINGTON, D. C., 5 July 1979

ORGANIZATION AND FUNCTIONS

OFFICE OF THE ASSISTANT CHIEF OF STAFF FOR AUTOMATION AND COMMUNICATIONS

PURPOSE

This regulation supplements AR 10-5 by prescribing the internal organization and functions of the Office of the Assistant Chief of Staff for Automation and Communications (OACSAC). In addition, it constitutes section I of the OACSAC table of distribution and allowances (TDA).

ORGANIZATION

The official organizational chart is in the appendix.

FUNCTIONS

Functions are described below and identified by type, level, and functional matter addressed. "Type," "level," and "function" are defined in CSR 10-5. The numbers in parentheses after the titles of individuals and organizational elements correspond to those on the organizational chart and to paragraphs of the OACSAC TDA.

1. Assistant Chief of Staff for Automation and Communications (ACSAC) (01). Is responsible for the functions performed by the elements of his Army Staff agency.

Personal functions:

Is responsible to the Chief of Staff for overall coordination of the automation and communications activities of the U.S. Army. Is the Executive Agent Representative for fulfilling the Chief of Staff's responsibility as JCS Executive Agent for the Joint Interoperability of Tactical Command and Control Systems (JINTACCS) Program and is the JINTAACS Program Director having decision authority over the Services/ Agencies, when necessary, in the execution of the program.

*This is a new regulation. The previous automation organization and functions were included in CSR 10-10, 5 Sep 78, under the Director, Army Automation. The previous communications organizations and functions were included under the Office of the Deputy Chief of Staff for Operations and Plans.

Is the Army automation and communications focal point for Congress, General Accounting Office (GAO), Office of Management and Budget (OMB), General Services Administration (GSA), Joint Chiefs of Staff (JCS), Office of the Secretary of Defense (OSD), Office of the Secretary of the Army (OSA), major commands (MACOMs), other Services and DOD Agencies, academia and industry.

Is the Director of Major Program 3 of the Five Year Defense Program (FYDP) and functional program director for COMSEC Resource Program (CRP), Army Automation Program, and the Telecommunications and Command and Control Program (T&CCP). Is the Program Element (PE) Director for PE 35114 and for PEs in the series 32XXXA, 33XXXA and 357XXA and Program Director for OMA Sub-programs 3C and 3O.

Is chairperson of the Army Automation Steering Committee, Integrated Tactical Communications System (INTACS) Steering Committee, and Army Spectrum Management Committee; a member of the Select Committee (SELCOM), Program and Budget Committee (PBC), Research, Development and Acquisition Committee (RDAC), Construction Requirements Review Committee (CRRC), Army Staff Council, and Army Policy Council; the Army representative on the Military Communications Electronic Board (MCEB) and the Army U.S. Communications Security Board (USCSB); and a principal member of the OSD Telecommunications Council.

Is the Functional Chief of the ADP Civilian Career Program, and the Headquarters, Department of the Army proponent for the ADP and Communications Specialties in the Officer Personnel Management System (OPMS). Furnishes technical assistance in matters concerning the Warrant Officer and Enlisted Military Occupational Specialties (MOS) for ADP and communications.

Exercises supervision and control over the U.S. Army Computer Systems Support Agency (USAMSSA), U.S. Army Computer Systems Selection and Acquisition Agency (USACSSAA), and the Joint Interface Test Force of the JINCTACCS Program.

Serves as head of the Procuring Activity for the USACSSAA.

Within his scope of responsibility, the ACSAC has a relationship to the Chief of Staff and the Army Staff corresponding to that of a Deputy Chief of Staff.

2. Deputy Assistant Chief of Staff for Automation and Communications (DACSAC) (01). Is the principal adviser and alternate to the ACSAC.

Personal functions:

Is the functional chief's representative for the ADP Civilian Career Program. Acts for the functional chief in carrying out his responsibilities as delineated in CPR 950-1, Career Management.

3. Office of the Executive (01). Assists the ACSAC in focusing staff efforts on important matters requiring action and monitors and reviews joint and other staff actions to assure compliance with established policy and guidance.

Personal function:

Supervises the Administration Office.

4. Technical Adviser to the ACSAC (01). Is the principal technical adviser to the ACSAC on all automatic data processing and communications systems.

Personal functions:

Reviews, evaluates, and recommends approval/disapproval of research and development (R&D) efforts related to automation and communications techniques and systems in support of the Army's automation and communications objectives.

Provides technical advice and guidance to automatic data processing design and procurement agencies directly under HQDA, and to major Army commands.

Represents the Army on scientific and technical studies and panels involving automation and communications.

5. Spectrum Management Office (02).

Functioning Type	Level	Functions
Stf	A Stf	Electromagnetic Compatibility.
Stf	A Stf	Electromagnetic Spectrum Management.
Stf	Agcy	Electronic Warfare (Automation/Communications (A/C): spectrum planning).
Stf	Agcy	Environmental Quality Enhancement (Automation/Communications: pollution of the electromagnetic spectrum).
Stf	Agcy	Foreign Law (Automation/Communications: international coordination).
Stf	Agcy	Health Standards (Automation/Communications: impact evaluation of radiation hazard standards).
Stf	Dir	Automation/Communications Management (spectrum management/electromagnetic compatibility applications)
Stf	Dir	Chemical Matters (Automation/Communications: radiation hazards).

Functioning Type	Level	Functions
Stf	Dir	Civil Defense (Automation/Communications: spectrum planning).
Stf	Dir	Civil Emergency (Automation/Communications: spectrum planning).
Stf	Dir	Civilian Personnel Management (Automation/Communications: policy guidance for staffing, training, and classification for frequency managers in coordination with ODCSPER).
Stf	Dir	Command and Control Communications (national and international coordination of spectrum resources).
Stf	Dir	C-E System Interoperability Design (Automation/Communications: spectrum planning).
Stf	Dir	Development (Automation/Communications: spectrum planning).
Stf	Dir	International Law (Automation/Communications: international radio regulations - international telecommunications union).
Stf	Dir	International Military Standardization (Automation/Communications: spectrum planning).
Stf	Dir	Materiel Acquisition (Automation/Communications: spectrum planning; electromagnetic compatibility policy).
Stf	Dir	Nontactical Communications (spectrum planning; electromagnetic compatibility policy).
Stf	Dir	Operational Capabilities (Automation/Communications: electromagnetic spectrum supportability determination).
Stf	Dir	Personnel Distribution (Automation/Communications: spectrum management personnel requirements.
Stf	Dir	Satellite Communications (spectrum planning).
Stf	Dir	Status of Forces (Automation/Communications: rights to use of the electromagnetic spectrum).
Stf	Dir	Systems Review and Analysis (Automation/Communications: compliance with OMB Cir A-11).

Functioning Type	Level	Function
Stf	Dir	Tactical Communications (spectrum planning; electromagnetic compatibility policy).
Stf	Dir	Telecommunications (spectrum planning; electromagnetic compatibility policy).
Stf	Dir	TOE Development and Approval (Automation/Communications: spectrum management personnel).

6. Procurement Authority Office (03).

Functioning Type	Level	Function
Stf	Agcy	Materiel Acquisition (Automation/Communications aspects).
Stf	Agcy	Automation/Communications Standards (contractual aspects).
Stf	Agcy	Personnel Training (Automation/Communications: ADP contracting aspects).
Stf	Agcy	Interservice and Interdepartmental Support (Automation/Communications: Defense Acquisition Regulation (DAR) Council).
Stf	Dir	Automated Systems/ADPE (reviews, approves, and monitors automated systems acquisition).
Stf	Dir	Teleprocessing security (contractual aspects).
Mon	Agcy	Monitorship: Automation/Communications (procurement law contractual aspects).
Mon	Agcy	Monitorship: Automation/Communications (ADP acquisition plans).

7. Administrative Division (04).

Functioning Type	Level	Function
Mgt/Spt	Agcy	Internal Management (Automation/Communications: staff, congressional action control and manpower).
Mgt/Spt	Agcy	Internal Services (Automation/Communications: distribution and control of mail, messages and supplies, and personnel matters).

Functioning Type	Level	Function
Mgt/Spt	Agcy	Paperwork and Records Management (Automation and Communications: internal reports, publications, files, and records).

8. Director of Systems Integration (05). Is responsible for functions performed by elements of the directorate.

9. Transmission and Special Systems Division (06).

Functioning Type	Level	Function
Stf	A Stf	Satellite Communications.
Stf	A Stf	Tactical Communications.
Stf	A Stf	Telecommunications.
Stf	A Stf	Teleprocessing Security.
Stf	Dir	Budget Execution (Automation/Communications: COMSEC, satellite terminal, tactical communications: portion at DA, OSD, and OMB).
Stf	Dir	Security (Automation/Communications: joint signal security and computer security policy).
Stf	Div	Budget Formulation (Automation/Communications: transmission and special systems aspects).
Stf	Div	Budget Review (Automation/Communications: reviews all projects/programs related to transmission and special systems aspects).
Stf	Div	Program Activities (Automation/Communications: provides direction to INSCOM, USACC, and USARDARCOM on development of COMSEC Resource Program).
Stf	Div	Automation/Communications Management (reviews and validates MACOM A/C plans for transmission and special systems aspects).
Stf	Div	Automation/Communications Standards (assists in defining computer security standards).
Stf	Div	Automated Systems/ADPE (reviews, approves, and monitors automated systems acquisition, installation, operation).

Functioning Type	Level	Function
Stf	Div	Command and Control Communications (assists command and control communications activities associated with transmission and special systems).
Stf	Div	Nontactical Communications (provides direction, assistance on Defense Communications System activities).

10. Switching and Processing Division (07).

Functioning Type	Level	Function
Stf	A Stf	Nontactical Communications.
Stf	Dir	Transportation (Automation/Communications: reviews plans, programs, budgets, and procedures for Army tactical/nontactical air traffic control).
Stf	Div	Budget Formulation (Automation/Communications: coordinates with appropriation directors to ensure inclusion of adequate resources for automation and communications).
Stf	Div	Budget Review (Automation/Communications: reviews/validates and prioritizes OPA requirements. Provides expertise in supporting justification during reviews by Army committees, OSD/OMB and Congress).
Stf	Div	Program Activities (Automation/Communications: development of programs for inclusion in Program Objective Memorandum (POM). Provides guidance to MACOMs for equipment development and transition planning for base communications systems).
Stf	Div	Satellite Communications (switching and processing aspects).
Stf	Div	Tactical Communications (switching and processing aspects).
Stf	Div	Telecommunications (switching and processing aspects).
Stf	Div	Security (Automation/Communications: switching and processing aspects).

Functioning Type	Level	Function
Stf	Div	Budget Execution (Automation/Communications: monitors all appropriations and manpower in assigned program elements. Recommends corrective action for deviations from obligational plan).
Stf	Div	Automated Systems/ADPE (reviews, approves and monitors automated systems acquisition, installation, and operation).
Stf	Div	Automation/Communications Management (reviews and validates MACOM A/C plans for switching and processing).
Stf	Div	Command and Control Communications (switching and processing aspects).

11. Functional Systems Division (08).

Functioning Type	Level	Function
Stf	A Stf	Automated Systems/ADPE.
Stf	A Stf	Command and Control Communications.
Stf	A Stf	Automation/Communications Management.
Stf	Dir	Review and Analysis Program (Automation/Communications: coordinates and conducts appraisals to assure effectiveness of automated systems in peace and war).
Stf	Div	Nontactical Communications (WWMCCS - provides support to National Command Authority for intelligence, communications, command facilities, warning systems, and executive aides in the area of nontactical communications, telecommunications, and automation for all WWMCCS systems).
Stf	Div	Budget Formulation (Automation/Communications: Program Element (PE) Director for ACSAC portion of WWMCCS; provides monitorship for PEs assigned which contain automation/communications resources).
Stf	Div	Tactical Communications (planning, organizing, and monitoring integration of major end items of tactical communications equipment; focal point for INTACS committee).

Functioning Type	Functioning Level	Function
Stf	Div	Automation/Communications Standards (ensures that GSA, DOD, and Army standards are compiled with in the design and development of ADP projects).
Stf	Div	Program Activities (Automation/Communications: provides expertise and assistance in development of A/C programs for inclusion in the Army POM).
Stf	Div	Budget Formulation (Automation/Communications: coordinates with DAAC-RM to ensure inclusion of adequate resources for A/C programs).
Stf	Div	Budget Review (Automation/Communications: provides expertise in supporting justification for A/C projects during reviews by Army committees, OSD/ OMB, and Congress).
Stf	Div	Economic Analyses (Automation/Communications: reviews and evaluates ADP economic analyses for validity and accuracy in justifying proposed automation alternatives).

12. Director of Policy, Plans, and Evaluation (09). Is responsible for functions performed by elements of the directorate.

Functioning Type	Functioning Level	Function
Stf	A Stf	Automation/Communications Standards.
Stf	Agcy	Audit Compliance (Automation/Communications: reviews and coordinates corrective actions to be taken by OACSAC, USAMSSA, USACSSAA, USACSC, and USACC on audit reports relating to automation and communications matters).
Stf	Agcy	Inspector General Activities (Automation/Communications: coordinates on all IG and USAAA reports relating to automation and communications inspections and audits).
Stf	Agcy	Inspection Compliance (Automation/Communications: reviews and coordinates corrective actions to be taken by OACSAC, USAMSSA, USACSSAA, USACSC and USACC on inspection reports relating to automation and communications matters).
Stf	Agcy	Telecommunications (wiretap, investigative monitoring and eavesdrop activities (WIMEA) communication management monitoring by communication personnel and office telephone monitoring).

Functioning Type	Functioning Level	Function
Stf	Agcy	Commercial and Industrial Type Activities (CITA) Program (Automation/Communications: reviews analysis and approval of automation functions).
Stf	Dir	Cost Analyses (Automation/Communications: policy aspects).
Stf	Dir	Economic Analyses (Automation/Communications: policy aspects).
Stf	Dir	Command and Control Communications (policy aspects).
Stf	Dir	Nontactical Communications (policy aspects).
Stf	Dir	Satellite Communications (policy aspects).
Stf	Dir	Tactical Communications (policy aspects).
Stf	Dir	Automated Systems/ADPE (goals and objectives).
Stf	Dir	Automation/Communications Management (policy aspects).
Stf	Dir	Telecommunications (policy aspects).

13. Director of Resource Management (10). Is responsible for functions performed by elements of the directorate.

Functioning Type	Functioning Level	Function
Stf	Agcy	Progran Activities (Automation/Communications: develops Telecommunications and Command and Control Program (T&CCP), Army Automation Program (AAP), Army Communications Security (COMSEC) Resource Program (CRP), and maintains telecommunications subsystem of the FYDP. Provides input to COA as necessary for the DA PGB to commands and agencies).
Stf	Agcy	Budget Formulation (Automation/Communications: develops budget for OMA subprograms 3C and 30; analyzes Decision Package Sets and prepares reclama; prepares Justification Books for President's Budget and Program and Budget Guidance for MACOMs).

Functioning Type	Functioning Level	Function
Stf	Agcy	Budget Execution (Automation/Communications: fiscal guidance, management controls, and reprograming actions for automation and communications systems resources).
Stf	Agcy	Manpower Utilization (Automation/Communications: automation and communications aspects).
Stf	Agcy	Equal Opportunity Programs (Automation/Communications: automation and communications aspects).
Stf	Agcy	Civilian Personnel Management (Automation/Communications: supports the ACSAC in executing his responsibilities as the Functional Chief of the ADP Civilian Career Program).
Stf	Agcy	Military Personnel Management (Automation/Communications: supports the ACSAC in executing his responsibilities as the functional proponent for the ADP specialty (53) and communications specialties (25 and 27)).
Stf	Agcy	Organization (Automation/Communications: coordinates, reviews, and serves as focal point for realignments, reorganizations, and closures affecting A/C personnel and organizations IAW AR 5-10).
Stf	Agcy	Personnel Utilization (Automation/Communications: manages the identification of MOBDES positions and ACDUTRA assignments).
Stf	Agcy	Personnel Training (Automation/Communications: education and training of military and civilian personnel in the automation and communications disciplines).
Stf	Dir	Automation/Communications Management (Army Automation and Planning, Programing, and Evaluation System (AAPPES)).

14. JINTACCS Program Office (11)

Functioning Type	Functioning Level	Function
Stf	Agcy	Command and Control (Automation/Communications: Interfaces concepts, plans, and standards to ensure compatibility of tactical command and control systems/facilities planned to be used by the Services/Agencies in joint military operations).

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Functioning Type	Functioning Level	Function
Stf	Agcy	C-E System Interoperability Design (Automation/Communications: guidance to the Services and Agencies for ensuring that their tactical command and control systems/facilities are compatible/interoperational in joint and international military operations).
Stf	Agcy	Management Analysis (Automation/Communications: Performs critical evaluations and appraisal of information to determine effectiveness of Services and Agencies performance in the accomplishment of the JINTACCS director's missions, tasks, functions, and programs).
Stf	Agcy	Development (Automation/Communications: plans, designs, constructs, and tests experimental models and devices for conducting joint compatibility/interoperability testing of Service/Agency tactical command and control systems/facilities).
Stf	Agcy	Development Test and Evaluation (Automation/Communications; conducts process to determine suitability of Service/Agency tactical command and control systems to be compatible/interoperable in joint military operations).
Stf	Agcy	DOD, Joint, and Combined Organizations and Functions (Automation/Communications: directs an organiza
Stf	Agcy	External Administrative Services (Automation/Communications: performs Contract Officer's Representative (COR) missions and functions for contracts in support of the JINTACCS Executive Agent's responsibilities).
Stf	Agcy	International Military Standardization (Automation/Communications: joint aspects compatibility/interoperability concepts, standards, data exchange, data elements, and data codes for tactical command and control systems/facilities).
Stf	Agcy	Operational Capabilities (Automation/Communications: develops, prints, and publishes material to be used by the Services/Agencies, JCS, and field commands relative to the JINTACCS aspects of compatibility and interoperability of tactical command and control systems/facilities in joint military operations).

Functioning Type	Functioning Level	Function
Stf	Agcy	Publications (Automation/Communications: develops, prints, and publishes material to be used by the Services/Agencies, JCS, and field comamnds relative to the JINTACCS aspects of compatibility and interoperability of tactical command and control systems/facilities in joint military operations).
Stf	Agcy	Roles and Missions (Automation/Communications: development and assignment of tasks, functions, and responsibilities for JINTACCS organizations such as the JINTACCS Service/Agency Support Office (JSASO) and the Joint Interface Test Force).
Stf	Agcy	Scientific and Technical Information (Automation/Communications: develops and disseminates results of studies, practices, methodology, and procedures developed and being developed through the JINTACCS program to achieve compatibility/interoperability of automated and nonautomated tactical command and control systems/facilities of the Services/Agencies in joint military operations).
Stf	Agcy	Standardization (Automation/Communications: develops standards for achievement of compatibility/interoperability of Service/Agency tactical command and control systems/facilities of the Services/Agencies used in joint military operations).
Stf	Agcy	Systems Review and Analysis (Automation/Communications: performed relative to all tactical command and control system/facilities used by the Services and Agencies for achievement of joint compatibility and interoperability).
Stf	Div	Budget Review (Automation/Communications: Confirms that Service and Agency tactical communication capabilities are considered during development of JINTACCS compatibility/interoperability documentation and during joint testing).
Stf	Div	Command and Control Communications (ensures that Service and Agency tactical communication capabilities are considered during development of JINTACCS compatibility/interoperability documentation and during joint testing).

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Functioning Type	Functioning Level	Function
Stf	Div	Automation/Communications Management (develops joint technical interface compatibility/interoperability concepts, design plans and standards. Directs joint testing. Performs configuration management of joint approved concepts, plans, and standards).
Stf	Div	Budget Execution (Automation/Communications: develops policy guidance, management controls and actions concerning the consolidated budget for accomplishment of the JINTACCS program)
Stf	Div	Budget Formulation (Automation/Communications: develops, presents, and justifies budget estimates for accomplishment of the Executive Agent's portion of the JINTACCS program).
Stf	Div	Internal Management (Automation/Communications: plans, organizes, motivates, directs, and controls resources to ensure internal operational effectiveness of the JINTACCS Executive Agent's responsibilities).
Stf	Div	Automated Systems/ADPE (as applied to performing the functions for the JINTACCS Executive Agent).
Stf	Div	Program Activities (Automation/Communications: translation of mission requirements of CSA as Executive Agent for the JINTACCS program into specific resource requirements leading to program development).

(ACSAC)

BY DIRECTION OF THE CHIEF OF STAFF:

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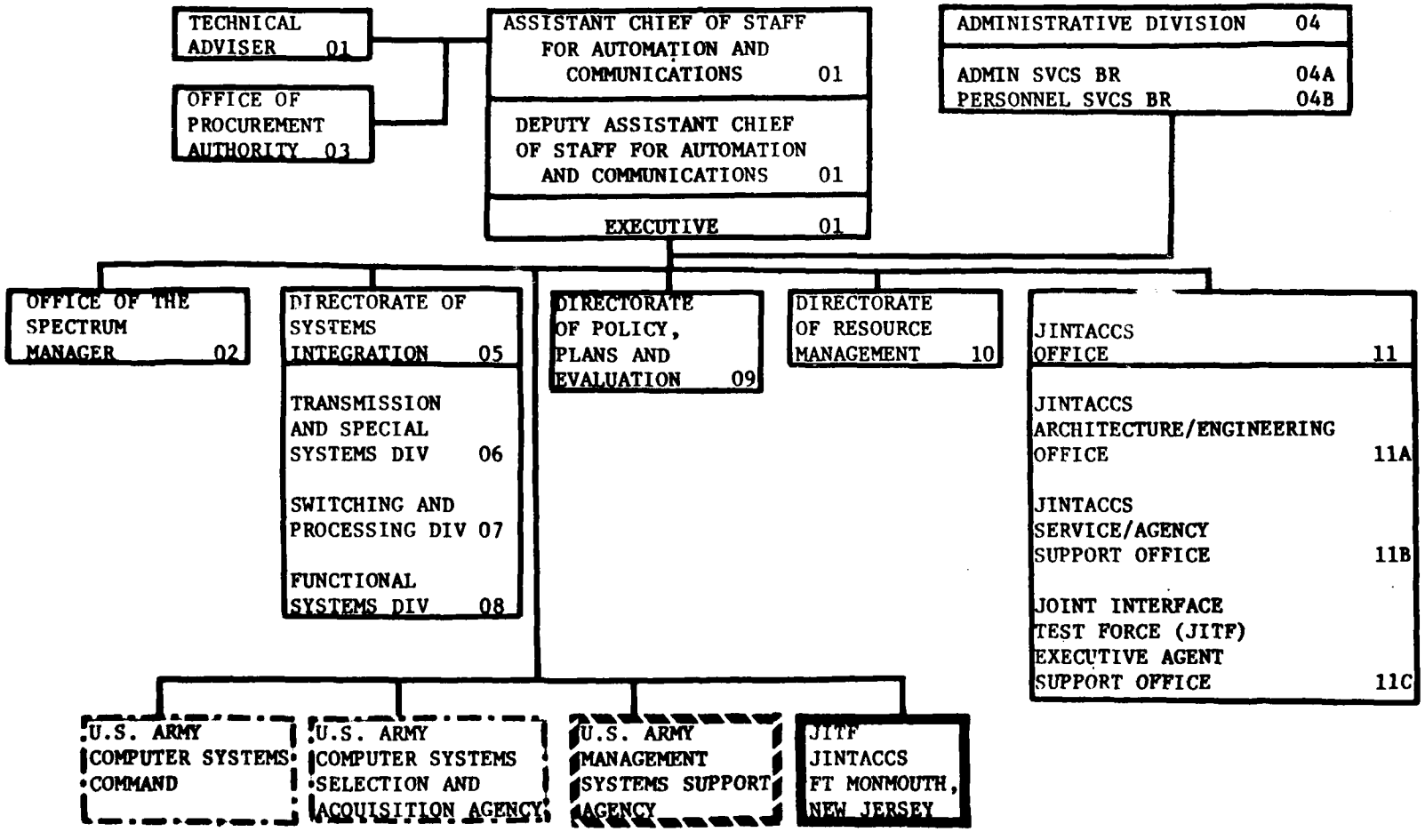
APPENDIX

HEADQUARTERS, DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT CHIEF OF STAFF FOR AUTOMATION AND COMMUNICATIONS (TDA CSW4DGAA00)



STAMMIS DEVELOPMENT

Under the current published version of AR 18-1, dated 22 March 1976, Class A1 STAMMIS are considered to be all multicommand MIS except Worldwide Military Command and Control System (WWMCCS) and Intelligence Data Handling System (IDHS). A HQDA Proponent Agency (normally the functional proponent of the facts) (PA) guides the development of the initial system concept. He is responsible for formulating the statements of requirements through the General Functional System Requirement (GFSR), and the cost-benefit analysis of the competing alternatives through the use of the Management Information System Economic Analysis (MISEA). Upon completion and initiation staffing, the GFSR/MISEA are submitted to the ASA(IL&FM) for approval, in the case of the Class A STAMMIS. Upon approval of the GFSR/MISEA, the ARA will be designated, and work begun jointly on the detailed system specifications, the GFSR, using as the base the Detailed Functional System Requirement (DFSR), in conjunction with the ARA. The MISEA will also be updated upon completion of DFSR, and throughout the development process. The DFSR and updated MISEA must then be submitted to ASA(IL&FM) for approval. Upon issuance of the Project Master Plan (PMP) Guidance, the PMP will be prepared by the ARA, and submitted to the ASA(IL&FM) and OACSAC for review and approval. Upon approval, the PMP will be executed by the ARA, and the system designed in accordance with the specification detailed in the DFSR. After completion of the system, but before formal testing a Systems Development Review (SDR) will be held, to insure that the proposed complies with PMP and DFSR guidance. Additional SDRs may also be scheduled throughout the development cycle, if deemed necessary. Upon completion of required SDR, a System Integration Test (SIT) will be conducted by the ATA, using PA furnished test data. Although the SIT is conducted by the full participation by the PA is expected to insure that the system fully filled its requirements and is ready for operational testing. Upon completion of SIT, a report is prepared and submitted to the approving name authority. Approval of the report, and the updated MISEA that is submitted with it, constitutes authority to conduct the Prototype Evaluations Test (PET). The PET involves testing the complete system in a live operational environment. Thirty days prior to the PET, a Systems Development Package (SDP) will be prepared, which includes such things as flow charts, formats, draft user's manual, training plans, etc. This SDP is prepared by the ARA, with appropriate input from the PA and forwarded to DAAC. In addition, a Systems Extension Plan (SEP) is prepared by the ARA in coordination with the PA and MACOM's. This document which is reviewed and approved by ASA(IL&FM), provides a detailed system extension plan. Following the PET, the ARA will prepare the test report, and the PA a revised MISEA. These documents are then forwarded to ASA(IL&FM) who is the approving authority for prototype evaluation and systems extension. Following extension to the field, the system is placed under configuration management control, which includes formal change control procedures. These procedures provide for recommendation by the users and approval by the PA of all functional changes. Changes are classified as Emergency, Urgent, Priority, or Routine, depending upon their criticality. A 24 hour, 7 day-per-week assistance service to all users is available.

US Army Computer Systems Command, in addition to the role as the Army developer of STAMMIS, also is responsible for many other services for the total Army.

a. Direct the activities of the Army Institute for Research in Management Information and Computer Sciences (AIRMICS) located at the Georgia Institute of Technology in Atlanta, Georgia. These activities include software research in support of the development of assigned ADPS; integrated software reserach and development program in computer management information system and software techniques; maintain liaison with other services and industry in the course of software research and development.

b. Manage and direct the Performance Management and Evaluation Program (PME) utilizing hardware and software monitors so as to improve the performance capability of Army's computer systems.

c. Manage and direct the ADPE Reutilization Program to assure maximum benefits are realized from the Army's ADPE dollar.

d. Manage and direct the Data Processing Installation (DPI) Management Review Program so that attainment of standardization of DPI Operation is realized and DPI managers are provided state-of-the-art techniques in DPI management.

e. Manage and direct the ADP equipment and software inventory and related utilization program. This allows the Army to maintain a hardware inventory. In addition, the software inventory highlights duplication of effort and permits the maximum utilization of software expertise.

f. Administer ADP research, development and acquisition support and assistance to ODCSRDA and other DA and DOD agencies in areas of:

(1) ADP and computer associated operations research.

(2) Joint military strategies, operations, planning and back-up for national emergency programs.

(3) Computer-output micromation.

g. Manage DA executive and general purpose software for the IBM 360/370 series computers. Serve as the DOD coordinator for systems and utility software for assigned computer families.

h. Manage the Army Information Processing Standards Program (AIPS). Develop, approve and publish Army standards for ADP, Data Processing Installations (DPI), Data Elements, and Data Base Management Systems.

i. Finally, USACSC is responsible for supervision of Army Project Managers responsible for procuring ADP resources for processing STAMMIS in tactical and installation environments.

DARCOM Non-Tactical Automation

US Army Materiel Development and Readiness Command (DARCOM) consists of a nation-wide network of 66 military installations and 250 separate units.

It is responsible for the life cycle materiel functions formerly performed by six of the Army's seven Technical Services (Ordnance, Signal, Quartermaster, Engineers, Transportation, and Chemical) including research and development; test and evaluation; procurement and production; storage and distribution; inventory management; maintenance; and disposal.

DARCOM has inventory management responsibility for approximately $12.8 billion in principal items on hand in depots in Continental United States and $23.5 billion in ammunition and other major items in the hands of troops or at overseas depots. The command also has management responsibility for a $5 billion inventory in vehicle maintenance, subsistence, and other secondary items. It monitors an annual expenditure of approximately $15.7 billion. DARCOM directly employs approximately 9,300 military personnel and 106,000 civilian personnel.

With headquarters in the Washington, DC area, it operates through major subcommands and directs the activities of depots, laboratories, arsenals, maintenance shops, proving grounds, test ranges, and procurement offices throughout the US.

As an Army MACOM, DARCOM is both a user of DA Standard Systems (IFS, ITAADS, VTAADS, SCIPMIS, STARCIPS, MARDIS) and a developer (and user) of DARCOM Standard and Unique Systems. Automation is critical to performance of the DARCOM mission and implements the policies of the Commander.

Standard ADP system design and development activities of the command are managed principally by two central system design agencies under the operational control of the Director of Management Information Systems.

The Automated Logistics Management Systems Activity (ALMSA), located in St. Louis, Missouri, was activated in 1967 as a central systems design activity of Headquarters DARCOM, responsible for designing, integrating, programing, testing, documenting, installing, and maintaining standard ADP systems and equipment configurations for DARCOM Materiel Readiness and Research and Development Commands. It also serves as the DARCOM focal point for ADP advanced technology and the data element and codes

standardization program. In this capacity, ALMSA has developed and maintains one of the largest automatic data processing business and accounting systems ever developed, the Commodity Command Standard System (CCSS). The system is now installed at each of the materiel readiness commands and provides rapid and effective support in all functional areas of logistics management. Continued development and systems enhancement, utilizing new state-of-the-art techniques, are the futuristic goals of ALMSA in maintaining the CCSS in support of the DARCOM logistics management functions. As follow-on systems are developed and fielded, greater efficiency, speed, economy, and simplicity will be obtained through the use of the CCSS.

The Logistic Systems Support Activity (LSSA), located in Chambersburg, Pennsylvania, is responsible for designing, integrating, programing, testing, documenting, installing, and maintaining standard ADP systems and equipment configurations for DARCOM Army depots and data banks.

Another source of extensive automated systems development within DARCOM is the unique systems development actions of the Major Subordinate Commands (MSC). These unique systems can be either truly unique, such as the systems supporting the single manager for ammunition, or the World-Wide Ammunition Reporting System (WARS) in ARRCOM, or they may be a non-standard Army requirement. In this latter case the function may not have yet standardized their policies and procedures to the extent that a single automated system is acceptable to all users.

DARCOM has initiated a major effort to identify the more responsive of these unique applications for adoption as standard. Historically, the greatest effort for standardization was placed in those areas (such as supply accounting) where the greatest benefits would be received. DARCOM, and the Army, has received significant benefit from these actions. The Materiel Development Commands (MDC) are now beginning to standardize policies and procedures within their scientific and engineering environments, thus permitting more sharing of the benefits of standardization.

One of the more significant DARCOM actions associated with management of automated systems was the creation of the Logistics Systems Review Committee (LSRC).

The mission of the LSRC is to guide the DARCOM design activities and other DARCOM resources in the development, implementation, and maintenance of those standardized automated systems currently being operated or planned for operation within DARCOM.

The DARCOM Assistant Deputy for Materiel Readiness serves as the LSRC Chairman. Other primary members are: (1) Directors of Materiel Management, Procurement and Production, Readiness, Security Assistance, Plans Doctrine and Systems, Management Information Systems, Product Assurance, Development and Engineering, and the Comptroller; (2) Commanders of the five Materiel Readiness Commands; (3) Chairman of the Scientific and Engineering Computer Steering Committee. The Deputy of each of the above were designated as alternate members of the LSRC. The Commanders of Depot Systems Command (DESCOM) and ALMSA and the Chief, LSSA are non-voting members of the committee.

In cases where neither the primary or alternate member can attend a meeting of the committee, a designated representative from that command/directorate may attend in a non-voting capacity.

LSRC policy matters will normally be decided on a majority agreement basis. However, in matters pertaining to system change releases, each voting member has the power of VETO regarding inclusion of system change requests therein, progression of a release or any SCR's therein from division level testing to prototype testing, and proliferation of a release, or any SCR's therein after prototyping.

The LSRC is supported by Functional Coordinating Groups (FCG). The FCG is a group of specialists, highly knowledgeable in a particular functiona/technical area who are periodically assembled for the purpose of reviewing SCR's, and performing such other actions as may be directed by the LSRC. The FCG's are operational work groups of the LSRC and are chaired by the HQ DARCOM functional directorates with membership comprised of applicable user activities (MRC's/MDC's/depots), DESCOM, and the responsible Central System Design Activity.

DARCOM has 81 DPI's with a hardware inventory in excess of 230 million dollars. The DPI's are organic to their commands.

The command follows the AR 18-1 series regulations in the acquisition and life cycle management of its non-tactical automation support.

MACOM Standard/Unique Systems

Army MACOMs have authority under AR 18-1 to develop required automated systems in support of their mission/functions. Personnel resources (Functional and Technical) that are authorized at the MACOMs for this purpose vary from extremely limited for MDW to nearly 1000 for the wholesale systems at DARCOM.

Management and approval authority, within MACOM threshold, resides totally within the MACOM. If approval is beyond MACOM authority, appropriate documentation must be submitted to HQDA ASA(IL&FM) for approval; in the case of cryptologic systems approval must be obtained from NSA.

For purposes of this baseline, the MACOM standard/unique systems are being described using the "DARCOM World" as an example. This example is equally valid for other MACOMs, with an exception being those specific unique under the consolidated cryptologic program (CCP).

Requirements may be generated by elements of the MACOM HQ or by elements of the subordinate commands, installations, activities, etc. Approval of the requirement authorizes the MACOM to begin development of the system. Most MACOMs have "Central System Design Activities" such as the Automated Logistics Management Systems Activity (ALMSA) or Logistics Systems Support Agency for software development. However, they may assign this responsibility to a subordinate installation.

Many MACOMs have established ADP controlling bodies, such as TRADOC's Automatic Data Processing (ADP) Priorities Board or DARCOM's Logistic Systems Review Committee (LSRC). These bodies generally evaluate requirements and designate priorities for ADP system development, operations, and maintenance.

TRADOC NON-TACTICAL AUTOMATION

The mission of the US Army Training and Doctrine Command (TRADOC) is to get the Army ready for the next war. The basic responsibilities within this mission include training, combat developments, and doctrine.

TRADOC's organization is made up of 17 installations, 9 sub-installations, 3 integrating centers, 4 ROTC regions, 24 schools and colleges, 9 boards, and 9 special activities. It employs directly approximately 56,000 military personnel and 34,000 civilian personnel, and it has an annual buget of approximately $1.1 billion (OMA). TRADOC's headquarters is located at Fort Monroe, VA.

As an Army MACOM, TRADOC uses DA standard software systems extensively for BASOPS. TRADOC also develops and uses a number of command standard and installation-unique systems. The development of command standard systems is done at two central design agencies--Data Processing Field Office (DPFO), Ft Leavenworth, KS, and DPFO, Ft Monroe, VA.

The Automation Management Office (AMO) in HQ TRADOC for non-tactical ADP is the Information Management Division (IMD) under the Deputy Chief of Staff for Resource Management (DCSRM). IMD has staff supervision over DPFO, Ft Leavenworth and operational control of DPFO, Ft Monroe.

The primary function of DPFO, Ft Leavenworth is to support combat developments efforts through a large teleprocessing network. This network also supports some of the service schools and test boards. DPFO, Ft Leavenworth provides computer support to the US Army Command and General Staff College, and it provides system analysis/programing services and computer support for Ft Leavenworth BASOPS.

The primary function of DPFO, Ft Monroe is to support the staff elements at HQ TRADOC. Most of this support currently goes to Training and ROTC. (This support includes the design, development, processing, and maintenance of ADP systems.) DPFO, Ft Monroe is responsible for executive software used on BASOPS hardware at TRADOC installations, and it assists installations in the use of standard executive software.

In the area of ADP management, TRADOC follows the AR-18 series regulations in the acquisition and life-cycle management of its non-tactical automation support. In addition, TRADOC has implemented TRADOC Regulation 5-1, which specifies the interface between automation and communications. This regulation calls for an ADP/Telecommunications Interface Panel both at HQ TRADOC and at TRADOC installations. The panel is a vehicle for coordination among the users, communications people, and ADP people during the planning and development of ADP systems.

A recent management action set up the HQ TRADOC ADP Priorities Board to prioritize non-tactical computer processing requirements. The members of the board are:

a. Chief of Staff - Chairman

b. Deputy Chiefs of Staff for Resource Management, Training, Combat Developments, Personnel, Administration & Logistics, Engineer, ROTC, and Doctrine.

c. The Surgeon and the Communications & Electronics Officer.

A working group consisting of designated representatives of the board members and chaired by DCSRM-IMD will assist the board.

TRADOC has 30 data processing installations (DPI's) with a hardware inventory of approximately $40 million (Government-owned). These DPI's can be grouped as follows:

BASOPS installations	15*
DPFO	2*
System Analysis, Testing and Special Activities	5
Support of a School	7
Support of a School and a Training Center	1
Miscellaneous	1
	30

*DPFO, Ft Leavenworth counted twice

INSTALLATION UNIQUE DPI OPR

The Installation DPI operates under the control of the installation commander. It provides automation support to the installation for DA STAMMIS, MACOM standard systems, and installation unique systems. ARSTAF principals and MACOM commanders may delegate authority to activities commanded by a general officer for development and/or procurement of command and installation unique systems which will not exceed 3 M/yrs (software, hardware) and be absorbed by current equipment. Command unique systems which exceed the 5 M/yrs limitation or when approval is not delegated are developed and operated within the constraints established by AR 18-1 and require MACOM approval. Systems which cannot be developed within the MACOM/ARSTAF limitations of AR 18-1 require ASA(IL&FM) approval.

The Command Unique Systems may be developed either by contract or in-house. In-house includes support provided by the MACOM systems design and development center, the functional proponent, or the ARSTAF. The installation develops a requirement for automation. This requirement and concept document is forwarded to the MACOM for review and approval to develop, and with MACOM support as appropriate, approval to develop a detailed functional description and to design the system. This documentation is reviewed by the MACOM staff and systems design personnel for comment and feasibility to automate.

Upon approval of the coordinated FD and assurance that the system will not exceed AR 18-1 MACOM approval level a system design is developed and the system is programmed, tested, and implemented. Should the MACOM decide it would like to extend this system to another DPI a request is made through the ARSTAF for ASA(IL&FM) approval.

This requires:

a. An updated Functional Description

b. An Updated Economic Analysis

c. An Extension Plan

d. A successful System Evaluation Test.

e. A Statement that A-76 was considered and a justification for not contracting for the service. Many of the current STAMMIS systems were initially developed as command unique systems.

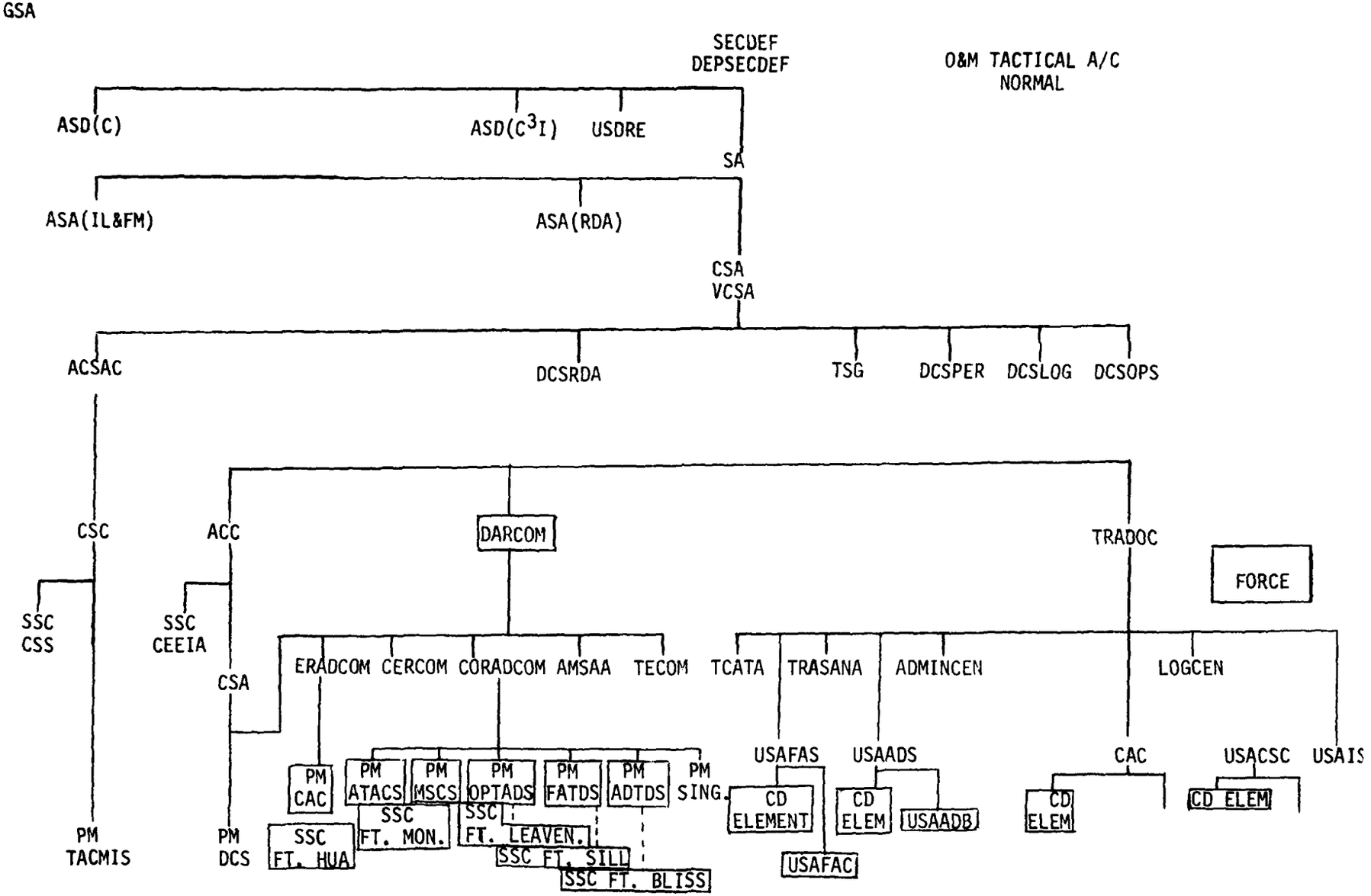
TACTICAL A/C - O&M NORMAL (Figure 8)

a. Operations. Concepts of operations for new, modified or existing tactical maneuver and supporting units are developed by TRADOC. Using OTEA and FORSCOM units, TCACTA manages tests for TRADOC using TRADOC standard scenarios and TRANSANA analyzes the results of the Force Development Test and Evaluation (FDTE). Validation of the new or modified unit for inclusion in the force structure is performed by DCSOPS. Automation/Communication equipment assets, MOS skills and quantities for both operations & maintenance are determined; training needs are derived; and appropriate Field and Technical manuals are provisioned. Full consideration for interconnecting requirements are considered for automation/communication services. These include provisions for echeloning air-ground , adjacent units, NATO/Allied and commercial service interfacing.

b. Equipment Maintenance. Equipment maintenance is performed in accordance with tactical element doctrine. The scope of all maintenance efforts is divided into various echelons or categories and responsibility is delineated in various technical manuals and supporting publications. The maintenance levels range from operation maintenance performed by the equipment operator through organic and direct support level maintenance to depot level maintenance where complete rebuild of equipment is normally undertaken.

Electronic Equipment Repairmen (EER) located at DSU/GSU points assist in identifying failure modes and Equipment Failure Reports (EFR) to the Readiness Command configuration product control manager for problem analyses which may indicate need for product improvements. In special occasions, as needs arise, emergency quick reaction programs are instituted to correct deficiencies in designs which cause serious readiness impacts.

c. Software Maintenance. The concept for supporting software intensive tactical systems is currently emerging. The concept provides for Software Development and Support Centers under the development commands of DARCOM (e.g., CORADCOM) to be collocated at the TRADOC doctrinal centers. These centers provide for correcting of latent defects in fielded software as well as new developments to conform to changing doctrine. These centers, maintain the materiel developer role. Within the Combat Development elements of TRADOC a Combat Developer System Manager is assigned. He is analagous to the TSM in the RDA process and acts as the combat developer in the O&M phase. The TRADOC boards provide user validation testing. New software releases to include exportable training software are provided the field through the normal NMP/NICP channels. In-theater support is provided by a software element attached to a selected GSU and software technicians attached to the contact maintenance team of the DSU.


GSA
SECDEF
DEPSECDEF
O&M TACTICAL A/C
NORMAL
ASD(C)
ASD(C3I)
USDRE
SA
ASA(IL&FM)
ASA(RDA)
CSA
VCSA
ACSAC
DCSRDA
TSG
DCSPER
DCSLOG
DCSOPS
CSC
ACC
DARCOM
TRADOC
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AMSAA
TECOM
TCATA
TRASANA
ADMINCEN
LOGCEN
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CAC
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ATACS
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MSCS
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OPTADS
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FATDS
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ADTDS
PM
SING.
USAFAS
USAADS
CAC
USACSC
USAIS
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PM
DCS
SSC
FT. HUA
SSC
FT. MON.
SSC
FT. LEAVEN.
SSC FT. SILL
SSC FT. BLISS
USAFAC

FIGURE 8

Tactical A/C O&M - CSS

a. Operations. For all STAMMIS and command unique systems, each using command operates funds and supports its own Data Processing Installation (DPI) in accordance with procedures conforming to AR 18-1, 18-4, 18-7 and other applicable Army and local regulations.

b. Software Maintenance. The post deployment software support networks for the Standard Multi-Command Management Information Systems STAMMIS is organized and deployed as follows.

NATIONAL CAPITAL REGION

HQ USACSC --

- Provides central configuation management and control of all STAMMIS. Develops, validates and releases all emergency/urgent and standard change packages from deployed user world-wide.
- Provides customer assistance for Personal Force Accounting Financial and Executive Software Systems.

FORT LEE, VIRGINIA --
USACSC Support Group Lee (SGL)

- Assigned responsible agency for all logistics STAMMIS.
- Provides Customer assistance.

FORT McPHERSON, GEORGIA
USACSC Support Group Atlanta (SGA)

- Assigned responsible agency TRADOC and FORSCOM Standard Installation Packages (SISPACS).

EUROPE
USACSC Support Group Europe (SGE)

- Customer Assistance
- Configuration control and design agency for USAREUR unique systems.

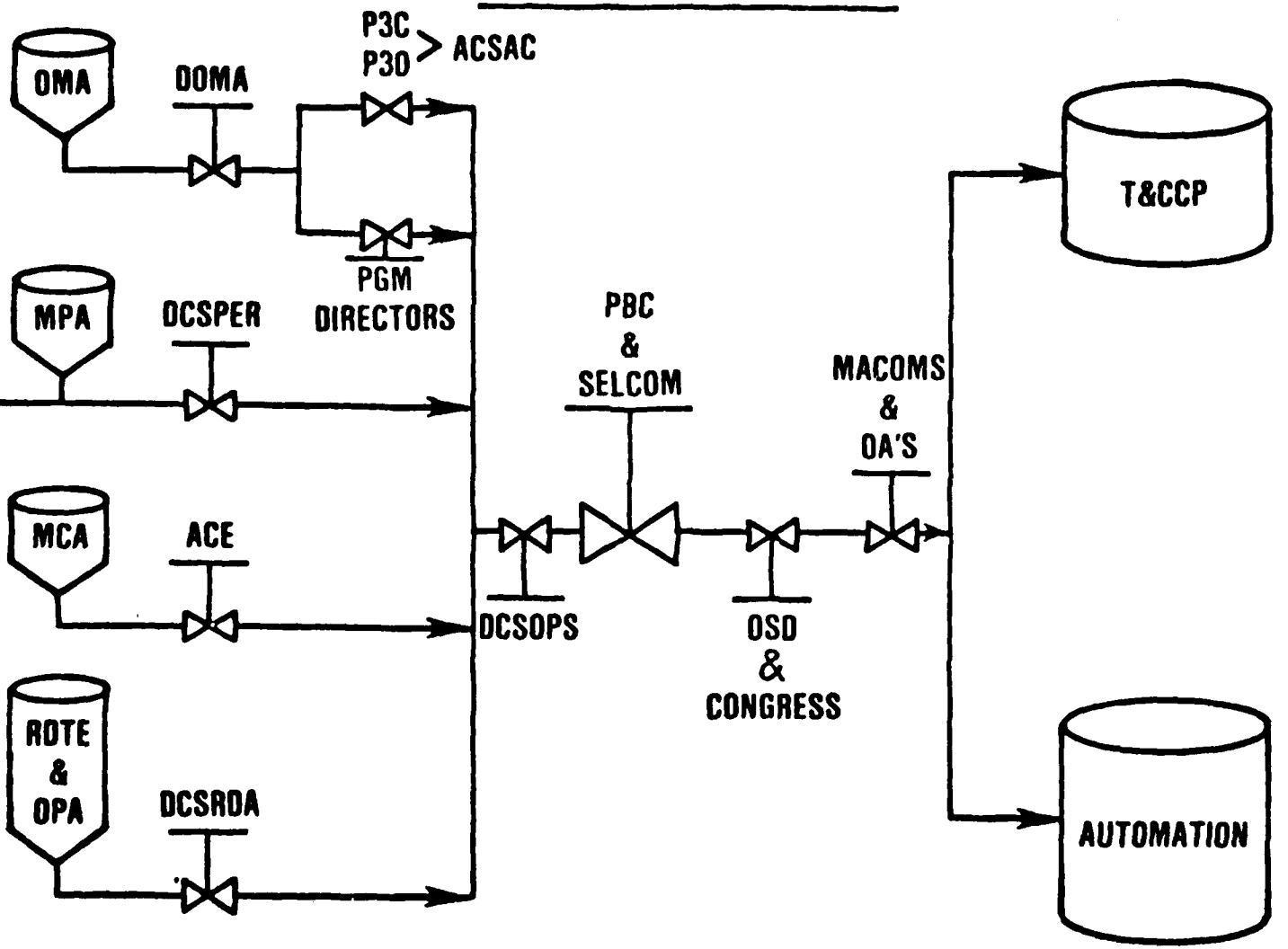
PACIFIC
USACSC Support Group Pacific (SGP)

- Customer Assistance for Pacific Region.
- Field Team Pacific (FTP) located in Korea for responsive maintenance cycle of in-country users.

Contact field representatives from assigned customer assistance offices assist users in identifying and reporting software failure modes. Incident reports are immediately sent to the designated configuration control and design agency for analysis. If change is required, a change package is prepared and distributed to user(s) as appropriate.

c. Hardware Maintenance. Each using command's procurement office is responsible to provide contracted hardware maintenance for their system hardware configuration. For currently deployed systems no military organic maintenance or supply system is involved. Current plans for new systems such as DAS^3 and DLDED contemplate military maintenance & parts provisioning. The specific details of the maintenance concept are not resolved at this time.

WHO CONTROLS

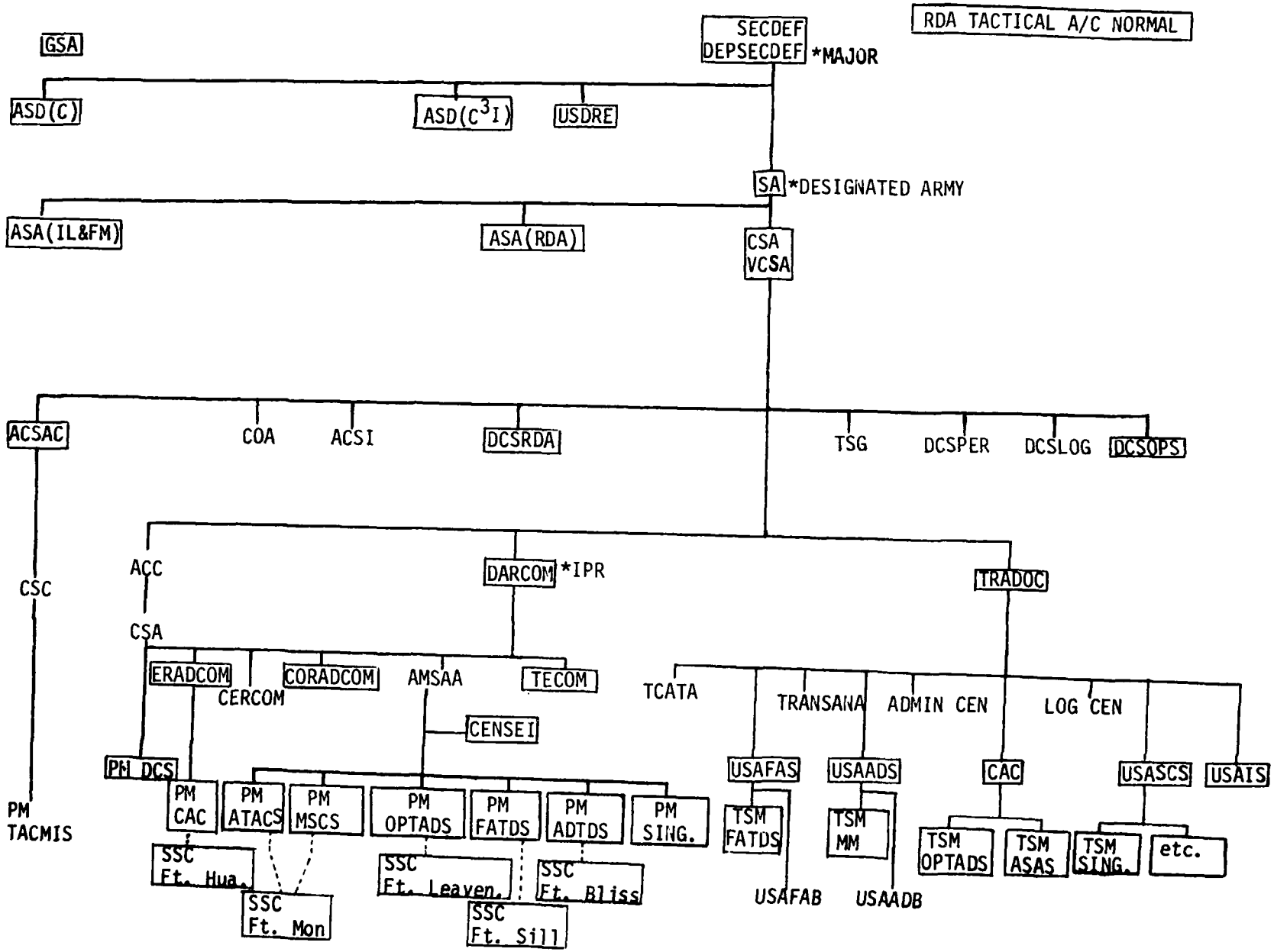


1. Tactical A/C - RDA (Figure 30-1).

a. Materiel Developer. US Army Materiel Development and Readiness Command (DARCOM) is responsible within assigned areas for RDTE and acquisition, of materiel, systems, or techniques required by the Department of the Army. Specific responsibilities are delineated in AR 1000-1. DARCOM acts as the Army's materiel developer for tactical automated systems and tactical communication systems and the hardware and software associated with these systems.

(1) Subordinate Commands. In order to fulfill its role as materiel developer, DARCOM has a number of subordinate development commands which are charged with the development responsibility of selected materiel systems. The architecture for tactical automated systems is defined as the executive, control, and subordinate systems (ECS^2) - which is an integrated approach for providing automation support to the battlefield to include the associated tactical communications. Figure 30-1 shows the primary development commands within DARCOM responsible for materiel acquisition of the ECS^2 and communications systems. Within CORADCOM, the Center for Systems Engineering and Integration (CENSEI) is charged with the specific responsibilities to insure the integration and interoperability of the automated systems and the supporting tactical communications systems in accordance with the Army Battlefield Interface Concept (ABIC), the Army Command and Control Master Plan (AC^2MP) and the Integrated Tactical Communications Systems (INTACS).

(2) Project Managers. When a system(s) has been identified, at Milestone I, for demonstration and validation, a project manager (PM) will be assigned for all major programs and designated Army programs. The PM is responsible for acquiring and fielding, in accordance with instructions from line authority, a cost-effective solution to the approved mission need that can be acquired, operated, and supported within available resources. The PM will be given authority and support needed to establish a strong system project office capable of achieving program objectives. The PM will be given a charter approved by the Secretary of the Army (SA) which prescribes the PM's responsibility, authority and accountability for program objective achievement. The charter will define the line of authority and reporting channels between the PM and the SA. Layers of line authority will be minimized. When a line official above the PM exercises decision authority on program matters, that decision will be documented as official program direction to the PM, and the line official will be held accountable for the decision. Figure 30-1 shows the major automation PMs and selected communications PMs.



*DECISION LEVEL

FIGURE 30-1

(3) For RDA of supporting communications systems above corps and within the theater tactical area, a project manager with dual command authority exists. The Project Manager DCS (Army) has full line authority from both ACC and DARCOM, and is responsible in accordance with DOD Directives 5000.1, 4100.35, AR 1000-1, 70-17 and other pertinent regulations for the DA centralized project management of those communication systems development and acquisition assigned by DARCOM, in his role as CG, USACSA and CG, USACEEIA for the DA centralized management of those communications systems engineering installation and acquisition assigned to the Army and assigned to ACC including:

(a) The DCS

(b) All Army communications above Corps not assigned to other agencies

(c) Base communications for overseas Army component commanders and for all CONUS installations not assigned to other agencies

(d) Army air traffic control systems (ATC)

(e) Automated telecommunications systems, including software for base communications and other systems.

b. Combat Developer. US Army Training and Doctrine Command (TRADOC) is the Army's principal combat developer, trainer, and user representative. Specific responsibilities are delineated in AR 1000-1. TRADOC acts as the Army's combat developer for tactical automated systems and tactical communications systems and the hardware and software associated with these systems.

(1) Subordinate Commands. In order to fulfill its role as combat developer, TRADOC has a number of subordinate centers and schools which are charged with the combat development of the ECS^2 and communications systems. TRADOC has delegated to one of these centers, the Combined Arms Combat Development Activity (CACDA), the additional responsibility to define and provide to all the functional proponents the overall architectural guidance for ECS^2 and define all interface requirements between battlefield C^3 systems as contained in the Army Battlefield Interface Concept (ABIC). Requirements generated by the various TRADOC functional proponents are passed to CACDA to insure architectural consistency and for a recommended TRADOC position.

(2) TRADOC Systems Management. For major systems and designated Army systems, a TRADOC System Manager (TSM) will be appointed by CG, TRADOC following program initiation (Milestone 0). The TSM will provide for the coordinated development and integration of user requirements as well as system support packages from the onset of program evaluation, and is the principal combat developer interface to the materiel developer Project Manager. The TSM will ensure that user requirements are taken into account early, and continuously thereafter, throughout the development cycle. Following program approval, the TSM will coordinate revalidation of the requirement, as needed, and will work with the DARCOM project manager to ensure that this function is fulfilled. The TSM is responsible for coordinating the combat developer, user, and trainer efforts in the life cycle management of the assigend system, and for doctrinal and organizational standardization or interoperability with NATO allies. For DA IPR and IPR systems, a TRADOC point of contact will be designated in the combat developments portion of TRADOC schools. These points of contact perform essentially the same functions as do the TSM's.

c. HQDA

(1) The Secretary of the Army has delegated to the ASA(RDA) responsibility for the overall management of the Army research, development, and acquisition program. The ASA(RDA) is designated the Army Acquisition Executive. In RDA matters, he/she will either act for the Secretary or present items to the Secretary for decisions as he/she determines appropriate.

(2) The Deputy Chief of Staff for Research, Development, and Acquisition (DCSRDA) has Army General Staff responsibility for Army research, development, and acquisition activities. Specific responsibilities are delineated in AR 1000-1.

(3) The Deputy Chief of Staff for Operations and Plans (DCSOPS) has Army General Staff responsibility for the development of strategic concepts, estimates, plans, and broad force requirements. DCSOPS has the specific responsibility for developing DA policy and guidance for materiel requirements documents to include Science and Technology Objectives (STO), Mission Element Need Statements (MENS), Letters of Agreement (LOA), Required Operational Capabilities (ROC) documents, Training Device Requirements (TDR) documents, Letter Requirements (LR) documents, and Basis of Issue Plans (BIOP). Other specific responsibilities are delineated in AR 1000-1.

(4) The Assistant Chief of Staff for Automation and Communications (ACSAC) has Army General Staff responsibility for integration of automation and communication systems.

(5) For ADPE acquisitions IAW AR 18-1 for tactical automated systems, a delegation of procurement authority is obtained from GSA through ASD(C) and ASA(IL&FM) as described in AR 18-1.

(6) The Army Systems Acquisition Review Council (ASARC) is a group of top managers of the Army which reviews major and designated system acquisition programs and recommends appropriate action to the Secretary of the Army for decision or subsequent recommendation to SECDEF. The Vice Chief of Staff chairs the ASARC, with membership:

Assistant Secretary of the Army (RDA)

Assistant Secretary of the Army (IL&FM)

Assistant Secretary of the Army (M&RA)

General Counsel

Commanding General, US Army Materiel Development and Readiness Command

Commanding General, US Army Training and Doctrine Command

Deputy Chief of Staff for Operations and Plans

Deputy Chief of Staff for Research, Development and Acquisition

Deputy Chief of Staff for Logistics

Deputy Under Secretary of the Army (OR)

Director of Program Analysis and Evaluation

Comptroller of the Army

Chief of Engineers

Deputy Chief of Staff for Personnel

Assistant Chief of Staff for Intelligence

Chief, Army Force Modernization Coordination Office

Assistant Chief of Staff for Automation and Communications

Commanding General, US Army Operational Test and Evaluation Agency

Others, as may be required (e.g., CINCUSAREUR; CG, FORSCOM).

(7) The decision review body for the acquisition of DA IPR and IPR systems is the in-process review (IPR). The number and timing of IPR may vary from one project to another; as a minimum, however, IPR will be held at Milestones II and III. Unless otherwise designated by HQDA (DCSRDA), the materiel developer/mission assignee agency will conduct the IPR. IPR membership will include the designated representative of the materiel developer/mission assignees, combat developer, logistician and trainer. In the absence of concurrence among all IPR members, the opposing positions will be reflected in the minutes and forwarded to HQDA for resolution.

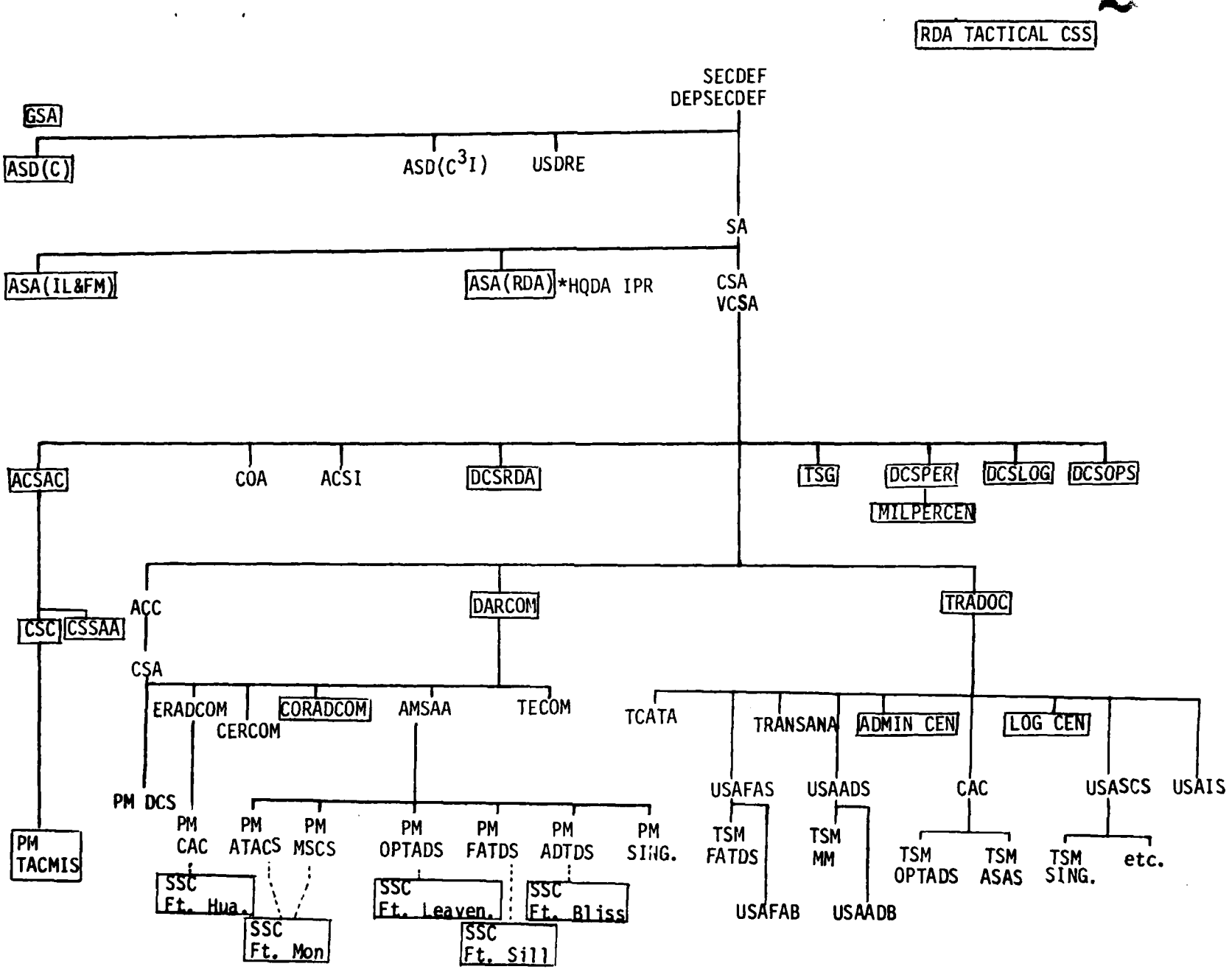
d. Department of Defense.

(1) The Under Secretary of Defense Research and Engineering (USDRE) is a permanent member of the DSRAC and shall be responsible for policy and review of all research, engineering development, technology, test and evaluation, contracting, and production of systems. Specific responsibilities are delineated in DODD 5000.1. In addition, the USDRE is designated as the Defense Acquisition Executive and, as such, is the principal advisor and staff assistant to the Secretary of Defense for the acquisition of defense systems and equipment.

(2) The Defense Systems Acquisition Review Council (DSARC) shall advise the Secretary of Defense on milestone decisions for major systems and such other acquisition issues as the Defense Acquisition Executive (DAE) determines to be necessary. Membership of the DSARC is delineated in DODD 5000.1.

2. Tactical Combat Service Support - RDA (Figure 30-2).

a. General. The RDA for the tactical combat service support subordinate systems of the ECS[2] architecture differs from the normal structure described in paragraph 1. These differences result from using off-the-shelf, commercial hardware ADPE and the use of Standard Army Multi-Command Management Information Systems (STAMMIS) software. Only differences from paragraph 1 will be described.



*DECISION LEVEL

FIGURE 30-2

b. Materiel Developer. The materiel developer is the Project Manager, Tactical Management Information System (PM TACMIS). The PM receives technical support for hardware from DARCOM (CORADCOM). Procurement of off-the-shelf ADPE is provided by CSSAA and for other hardware by DARCOM. CSC will specify and provide application (STAMMIS) software. Line authority for PM TACMIS is from SA through the Assistant Chief of Staff for Automation and Communications (ACSAC) and CG, CSC.

c. Proponent Agency. Several elements of the Army Staff have proponency roles in the development and acquisition of combat service support systems. In this role each staff element promulgates functional requirements and changes thereto based on current Army Regulation and changes affecting the functional area. The staff element forwards these requirements to appropriate TRADOC Centers for formal requirements document staffing. When approved, those requirements documents form the basis for new system acquisition and/or system improvements. The staff elements, in their role of proponent, serve as validators of the prototype system software functional logic correctness and completeness. The staff elements servicing as proponents are DCSLOG, DCSPER, OTSG and COA.

d. Combat Developer. The combat developer focal point is within HQ, TRADOC which coordinates the functional requirements of ADMINCEN, LOGCEN, Academy of Health Sciences (TRADOC associated center) and CACDA (battlefield architect).

e. HQDA. The only difference from paragraph 1 is that the ACSAC is in the line authority from SA to PM TACMIS.

f. Department of Defense. The TACMIS are HQDA IPR systems and as such do not go to the DOD level for decision other than for commercial off-the-shelf procurements as described in AR 18-1.

TACTICAL A/C - RDA TESTING

a. General. Testing of developmental items is divided into three general categories: those tests conducted by the PM to insure contractual compliance, Development Test (DT) and Operational Test (OT). The testing is integrated to the maximum extent possible to insure that no duplication testing occurs and that test results, where applicable, can be carried forward to subsequent testing. These three categories are performed to support each milestone decision.

b. PM Tests. These tests are the responsibility of the PM and he acts as the materiel developer. The TSM acts as the combat developer. Representatives from independent test agencies participate & validate any testing which will satisfy subsequent test requirements.

c. DT Test (Figure 31-1). Test and Evaluation Command (TECOM) is the independent test agent for DARCOM and is responsible for the conduct of DT. The Army Materiel Systems Analysis Agency (AMSAA) is the independent test evaluator for DARCOM. The TSM continues to act as the Combat developer. Test results are prepared by TECOM and evaluated by AMSAA. AMSAA presents the DT test results to the decisionmaking body (IPR, ASARC/DSARC). The PM presents the materiel developer position and the TSM presents the user position on the test results. The DCSRDA has Army General Staff responsibilities for RDA test and evaluation.

d. OT Test (Figure 31-2). The Operational Test and Evaluation Agency is the independent test agency for the Army and is responsible for the conduct of OT. For major and designated Army systems, the TRADOC Combined Arms Test Activity is the test manager. For IPR systems, the TRADOC Boards act as the test manager. The TRADOC Systems Analysis Agency (TRANSANA) is responsible for producing the Cost and Operational Effectiveness Analysis (COEA) based on the test results (from any of the tests as appropriate). OTEA presents the test results to the decision making body. The PM presents the materiel developed position and the TSM presents the user position on the test results and the COEA. The DCSRDA has Army General Staff responsibilities for RDA test and evaluation. The DCSOPS provides guidance for the user test program and manages the preparation and determines the adequacy of the COEA.

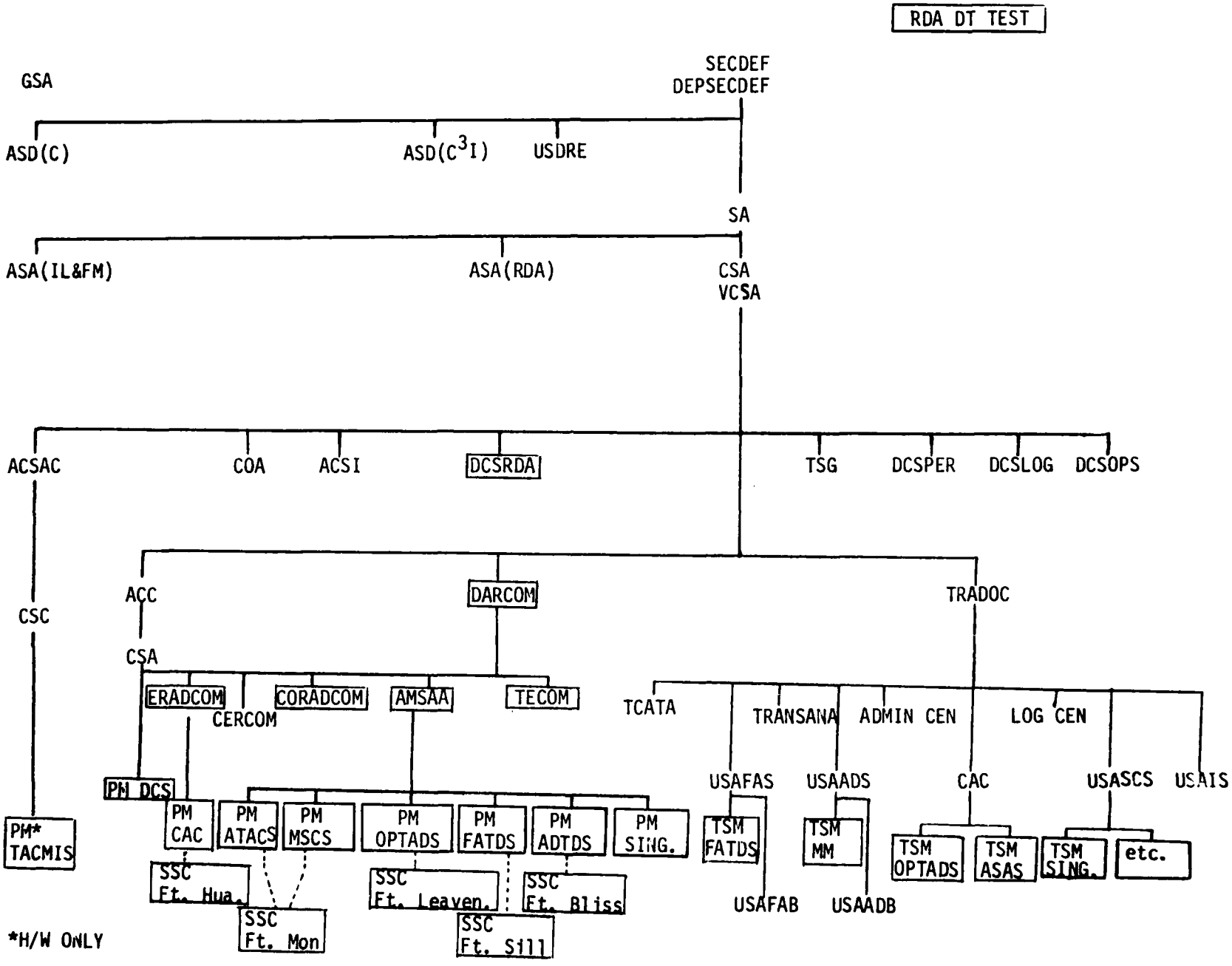
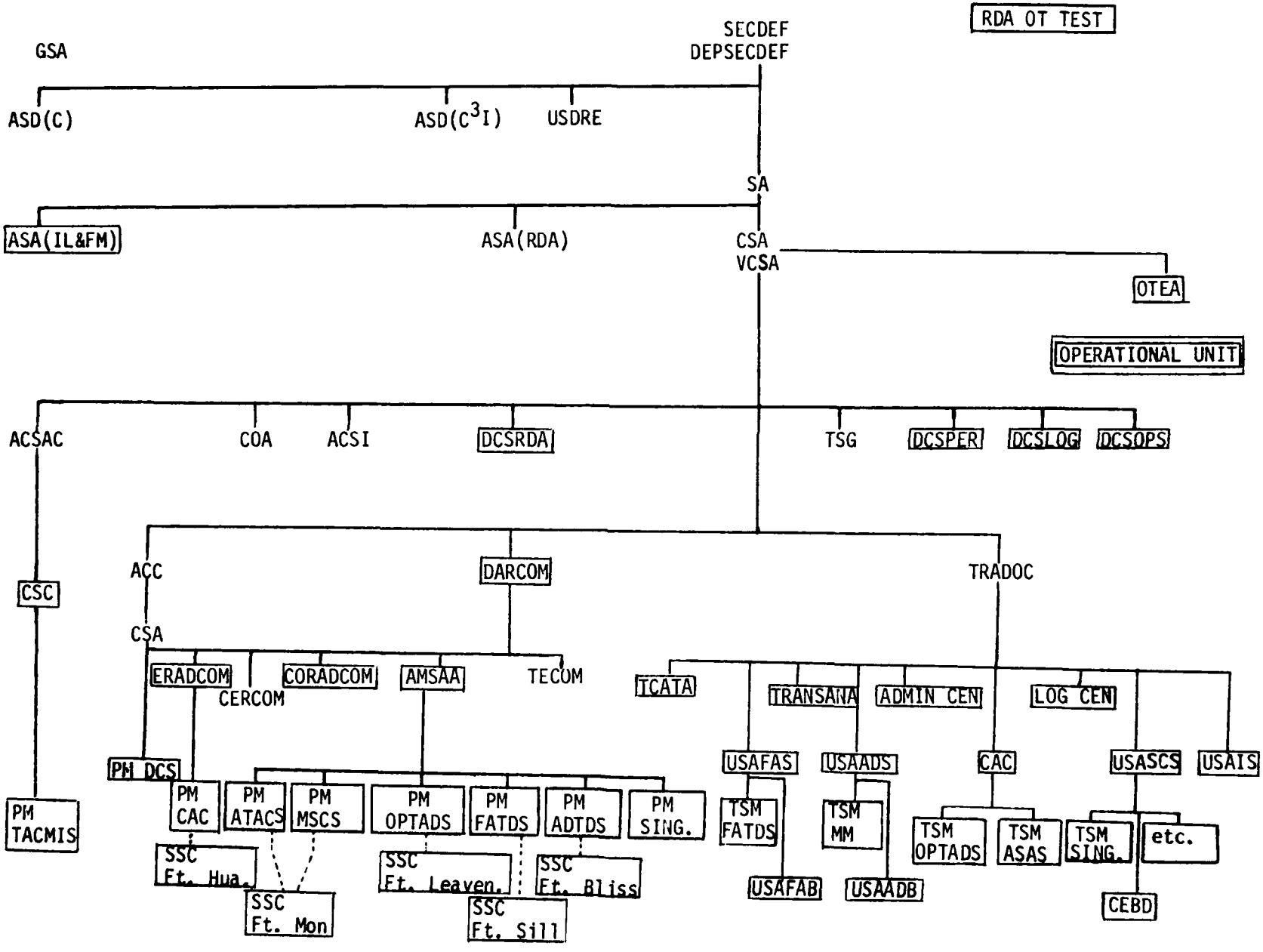

RDA DT TEST
GSA
SECDEF
DEPSECDEF
ASD(C)
ASD(C3I)
USDRE
SA
ASA(IL&FM)
ASA(RDA)
CSA
VCSA
ACSAC
COA
ACSI
DCSRDA
TSG
DCSPER
DCSLOG
DCSOPS
CSC
ACC
DARCOM
TRADOC
CSA
ERADCOM
CERCOM
CORADCOM
AMSAA
TECOM
TCATA
TRANSANA
ADMIN CEN
LOG CEN
PM DCS
PM CAC
PM ATACS
PM MSCS
PM OPTADS
PM FATDS
PM ADTDS
PM SING.
USAFAS
USAADS
CAC
USASCS
USAIS
PM* TACMIS
TSM FATDS
TSM MM
TSM OPTADS
TSM ASAS
TSM SING.
etc.
SSC Ft. Hua.
SSC Ft. Mon
SSC Ft. Leaven.
SSC Ft. Sill
SSC Ft. Bliss
USAFAB
USAADB
*H/W ONLY

FIGURE 31-1



- Tactical CSS OT
- Tactical A/C OT

FIGURE 31-2

CSS - TESTING

OF TESTS	TEST DIRECTION & CONTROL	TEST PURPOSE	APPLICABLE AR(s)	COMPARABILITY TO AR 1000.1
Performance Validation Test (PVT)	PM, TACMIS	Benchmark Test Used in Evaluation & Selection Process for ADPE	AR 18-1	Not Applicable for Developmental Hardware
Tactical Feasibility Test (TFT)	TECOM* *Not the Mandatory Test Agent, But Usually Selected By PM TACMIS	Customer Test Requested by PM, TACMIS to Confirm Suitability of Hardware Configuration to meet Performance & Environmental Requirements, TECOM, when Involved Follows AR 70 Series Regulations as Modified by PM, TACMIS IAW Requirements Document	AR 18-1 AR 70 Series	Development Test (DT) (Hardware Only) • Hardware Certification • Environmental Certification
System Integration Test (SIT)	CSC	Developer's Internal Certification of System Software and Integration With Target Hardware Configuration	AR 18-1	System Integrator Internal Test (Normally Contractor)
Level III	Proponent Agency and/or TRADOC Center	Use Test Data in Laboratory Like Environment to Validate Functional System Logic Sufficiency Using Target Hardware Configuration	AR 18-1	Development Test (DT) (Prototype System) Functional Software Certification
Prototype Evaluation Test (PET)	Field User at Opnl Site	Certify the Capability of the System to Satisfy the Predetermined Processing Requirements in a Live Operational Mode at a Selected Prototype Test Site. Full Logistics and Training Support Packages are Introduced for Evaluation and Certification	AR 18-1	Operational Test (OT) • System Certification • System Support Certification
For System Improvements/ Changes Affecting Hardware And/Or Software Configuration Modified PET in Two Increments Constitutes the Test Process				
Functional Qualification Test (FQT)	Field User at Opnl Site (CONUS)	Same as PET Above Except Site Selected is CONUS Facility Which Typifies (Average or Better) the Processing Requirements at all Deployable Sites	AR 18-1	
Functional Acceptance Test (FAT)	Field User at Opnl Site (EUROPE)	Same as FQT Above Except Site Selected is European Deployment	AR 18-1 AR 18-4 AR 18-7	

Figure 31-3

TACTICAL A/C - RDA TESTING CSS

a. General. Development and Operational (DT/OT) type testing for tactical CSS systems is largely described in AR 18-1 and associated documents with some technical testing in accordance with the AR 70 Series. A matrix of the various tests and their equivalency to the AR 1000-1 test sequence is shown in Figure 31-3. The following discussions are keyed to this matrix.

b. PM Testing. As described in previous paragraphs, DT testing for tactical A/C follows a formal test sequence (DT/OT I, II) keyed to major decision points for Major Systems (ASARC/DSARC). Testing is done by independent test agencies, Figure 31-4 (dark heavy borders). For tactical CSS, the process and players are different.

(1) A Performance Validation Test (PVT) for off-the-shelf ADPE is used as a benchmark in the procurement process as an evaluation and selection mechanism. This test would have no applicability in the case of developmental ADPE.

(2) A Technical Feasibility Test (TFT) is the principal and only test of the hardware to meet the performance and environmental requirements. The test agent is selected by PM TACMIS, and may be TECOM (not required). If TECOM is the test agent the testing is done in accordance with the AR 70 Series as modified by the requirements, as a Customer Test and the test report is returned to the PM for action. The TFT does not include the operational software but may use test software package.

c. OT Testing. For tactical CSS, operational type testing (OT) follows a different process and set of players.

(1) The initial complete system test is the System Integration Test (SIT) and the following are the areas of the ADP system:

A. Meets the requirements of system objectives
B. Is ready for testing in an operational environment
C. Contains no unauthorized features.
D. Consists of functionally validated software.

The SIT is conducted by USACSC, and does not involve the proponent agency(s), or operational units.

(2) The second level of test will include the DA proponent agencies and/or TRADOC center is the LEVEL III test in which the system is tested for functional adequacy by the proponent utilizing test data in a laboratory type environment, to validate basic functional system logic.

(3) This last level of test is the Prototype Evaluation Test (PET) and is conducted by a selected facility or unit to test the capability of the system to satisfy the predetermined processing requirements in a live operational environment and represents the first time that logistics and training support packages can be evaluated on a full system operating environment basis. A modified PET for system changes or improvements involves two test sequences: The first, Field Qualification Test (FQT), is conducted by a selected facility or unit as in (3) above; the second, Field Acceptance Test (FAT) is conducted in a like manner in USAREUR and represents the final acceptance of the change.

(4) The various test reports are then included in the PM TACMIS decision package for approval by a HQDA IPR as described in paragraph 3-2. At the conclusion

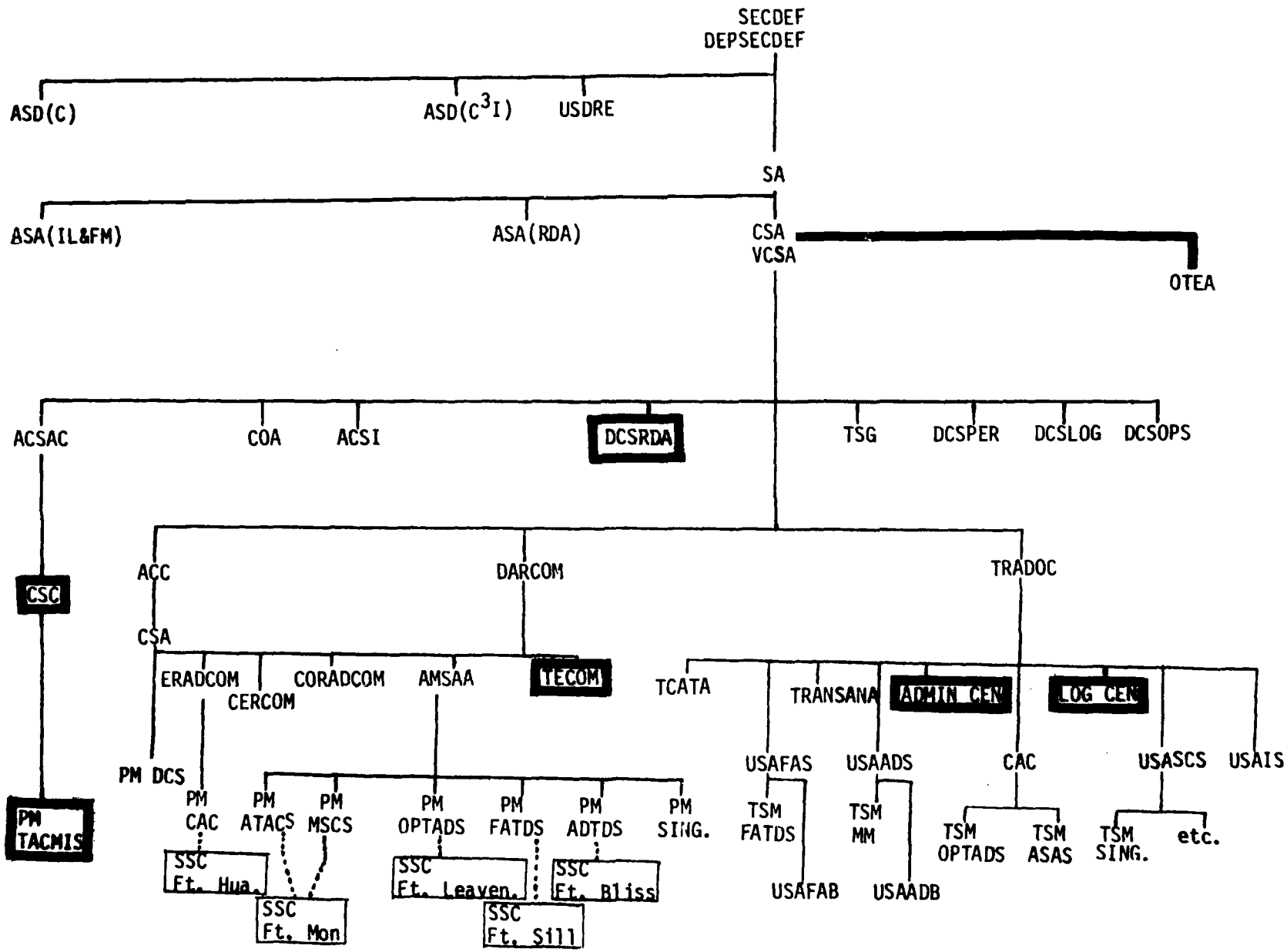

SECDEF
DEPSECDEF
ASD(C)
ASD(C3I)
USDRE
SA
ASA(IL&FM)
ASA(RDA)
CSA
VCSA
OTEA
ACSAC
COA
ACSI
DCSRDA
TSG
DCSPER
DCSLOG
DCSOPS
CSC
ACC
DARCOM
TRADOC
CSA
ERADCOM
CERCOM
CORADCOM
AMSAA
TECOM
TCATA
TRANSANA
ADMIN CEN
LOG CEN
PM DCS
PM TACMIS
PM CAC
PM ATACS
PM MSCS
PM OPTADS
PM FATDS
PM ADTDS
PM SING.
SSC Ft. Hua
SSC Ft. Mon
SSC Ft. Leaven.
SSC Ft. Sill
SSC Ft. Bliss
USAFAS
USAADS
CAC
USASCS
USAIS
TSM FATDS
TSM MM
TSM OPTADS
TSM ASAS
TSM SING.
etc.
USAFAB
USAADB

FIGURE 31-4

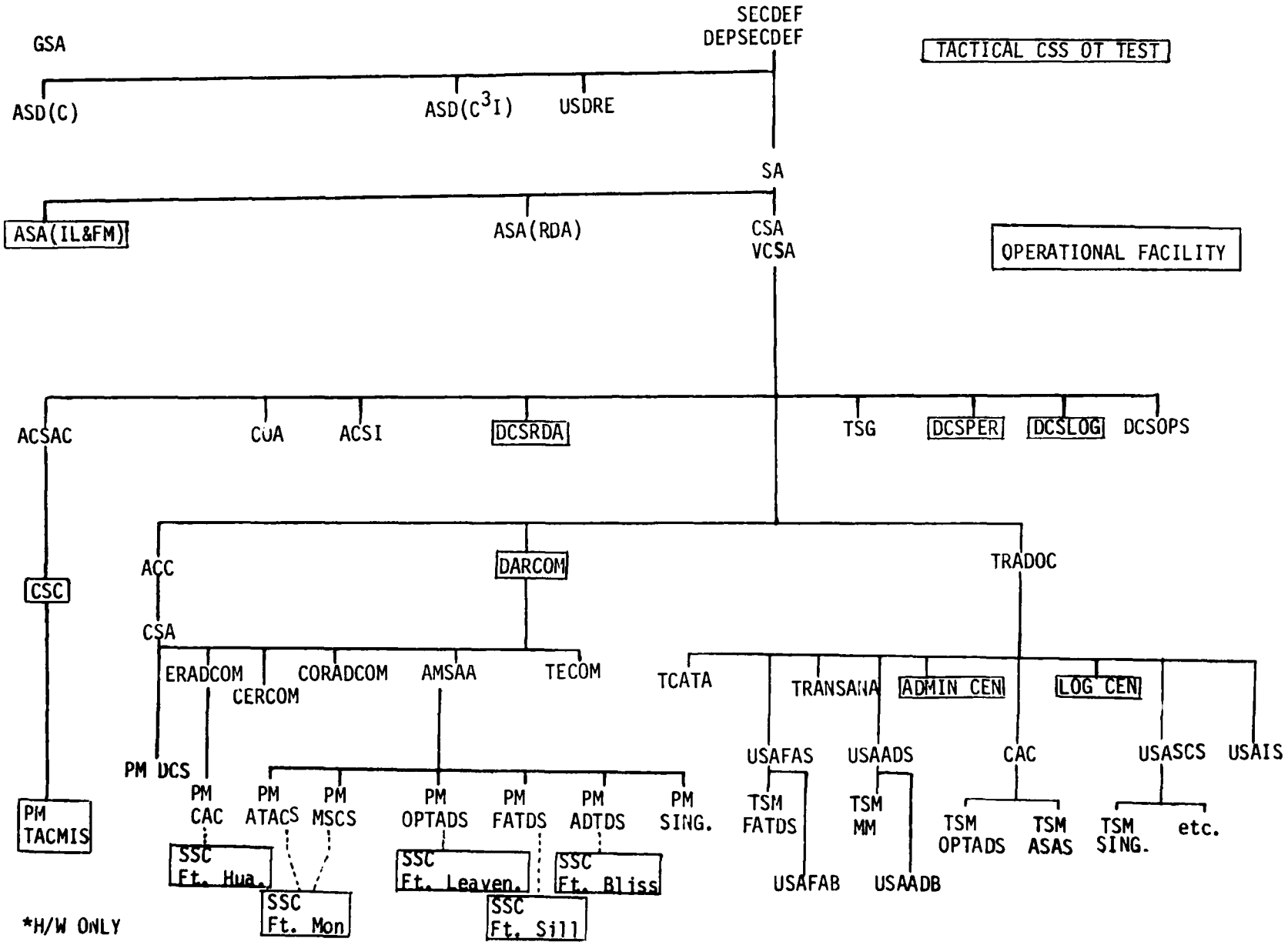

SECDEF
DEPSECDEF
GSA
TACTICAL CSS OT TEST
ASD(C)
ASD(C3I)
USDRE
SA
ASA(IL&FM)
ASA(RDA)
CSA
VCSA
OPERATIONAL FACILITY
ACSAC
COA
ACSI
DCSRDA
TSG
DCSPER
DCSLOG
DCSOPS
CSC
ACC
DARCOM
TRADOC
CSA
ERADCOM
CERCOM
CORADCOM
AMSAA
TECOM
TCATA
TRANSANA
ADMIN CEN
LOG CEN
USAFAS
USAADS
CAC
USASCS
USAIS
PM DCS
PM TACMIS
PM CAC
PM ATACS
PM MSCS
PM OPTADS
PM FATDS
PM ADTDS
PM SING.
TSM FATDS
TSM MM
TSM OPTADS
TSM ASAS
TSM SING.
etc.
SSC Ft. Hua.
SSC Ft. Mon
SSC Ft. Leaven.
SSC Ft. Sill
SSC Ft. Bliss
USAFAB
USAADB
*H/W ONLY

FIGURE 31-5

of PET a final Management Information System Economic Analysis (MISEA) describing the cost-benefit analysis of competing alternatives is provided by the Proponent Agency, and included as part of the decision package. The MISEA is equivalent to the COEA as done by the TRANSANA in the tactical A/C process.

NON-TACTICAL COMMUNICATIONS

The fixed, non-tactical communications environment revolves around a sophisticated, high technology common user backbone network managed by the Defense Communications Agency (DCA). The backbone network operates in CONUS, transoceanic (via various means) and in overseas areas. It provides the primary transmission and switching system for a myriad of users.

The primary services provided are: Automatic Digital Network (AUTODIN), Automatic Voice Network (AUTOVON), and Automatic Secure Voice Communications Systems (AUTOSEVOCOM).

The backbone portion of the network uses a mix of wideband satellite transmission systems, leased commercial wideband transmission systems from commercial vendors, leased portions of the commercial transoceanic undersea cable systems and government owned wideband transmission and switching systems in specific geographic areas. Systems operational and technical standards are established and promulgated by DCA. This composite network is identified as the Defense Communications System (DCS). The DCS is supported by industrial funds, and administered by the DCA through the Defense Communications contracting office (DECCO). Each military service and other users of the DCS pay a prorated share of the backbone costs into the DCA managed industrial funds.

Each military service pays for their access lines into the DCS. The access line system must meet the stringent standards of the DCS or access is denied by DCA.

Certain portions of the DCS are leased by DCA. Other portions are operated and maintained by the military services under DCA management. These includes, for example, operations and maintenance of the ground satellite communications stations, the overseas DCS, AUTODIN switching centers, etc. This is accomplished through a mix of military and DOD civilian personnel augmented, as needed, by a contract force from industry.

The DCS undergoes continuous and evolutionary enhancement to provide improved capabilities and services for its users. These enhancements are planned by DCA in ccoordination with the military services. Implementation actions are accomplished through specific assignments to the services. The lead service tasked has primary implementation responsibility with assistance and shared funding by the other services. Again system management is accomplished by DCA who also assists each service in the budgetary process.

The DCS also provides certain other services to DOD agencies. These include satellite segment assignments for the Army Ground Mobile Froce Satellite system, assistance to the Navy for the FLEETSATCOM network, primary theater access and distribution for the Army (echelons above corps), command and control access to the communications networks fo the allies, and many others.

The DCS is designed to provide cost effective service in a day-to-day peacetime environment. The redundancies built into the network permit rapid transition to a wartime posture.

Each military service assigns a particular organization to operate and maintain, engineer and install their portion of the total DCS. Within the Army the US Army Communications Command (USACC), is assigned this responsibility.

In addition to the DCS, USACC is assigned the Army Base Communications (BASECOM) responsibility.

USACC management policy is founded on the principle of centralized control of decentralized operations. To help visualize the management process of this world-wide major Army command, the responsibilities are summarized as follows:

Commander USACC is responsible to the Chief of Staff, United States Army, for mission accomplishment of the USACC, as defined in AR 10-13, to provide those portions of the Defense Communications Systems (DCS) assigned to the United States Army, and direct Army communications for echelons above corps. Specifically, USACC acquires, engineers, and installs DCS (Army) and non-tactical communications systems; provides base communications to overseas Army components commanders and to all CONUS installation commanders; provides Army air traffic control (ATC) services for the both fixed and tactical as assigned by HQDA; and conducts combat development for DCS (Army and Army Air Traffic Control (ATC) systems and other development acitivites for base communications and assigned Army communications. Commands organization, installations, and activities as assigned by HQDA. US Army Communications Command (USACC) is a world-wide Major Army Command providing a communications service to a myriad of customers. USACC is headquartered at Fort Huachuca, AZ, and provides world-wide services through established geographical subordinate commands as depicted in Figure 32-1. Elements of the Army Communications Command are located in 14 countries and approxiamtely 28,000 personnel both military and civilians are assigned.

Geographic area sub-commands (Figure 32-2) were established to provide management control of the network. They are:

- 5th Signal Command - Europe
- 7th Signal Command - CONUS, Panama, Alaska and Puerto Rico.
- USACC - WESTCOM - Hawaii and the central Pacific.
- USACC - Japan - Japan including Okinawa.
- 1st Signal Brigade - Korea.

The commanders of the geographic USACC subordinate commands (except the commander 7th Signal Command) are "dual hatted" as the Signal Officer of the Major Army Command or host in the areas concerned.

Examples are: Commander 5th Signal Command is also the Deputy Chief of Staff Communications-Electronics on the USAREUR Staff; the Commander, 1st Signal Brigade is the Deputy Chief of Staff Communications-Electronics, Eighth US Army in Korea, etc.

Because of the many Major Army Commands which are in the 7th Signal Command's area of geographic responsibility the Commander, 7th Signal Command is not "dual hatted" with a single Army Command. Instead, a number of intermediate commands, subordinate to the 7th Signal Coomand, were created to provide "dual hat" services to the Major Army Commands with which they are associated and cololated. They are:

U.S. ARMY COMMUNICATIONS COMMAND

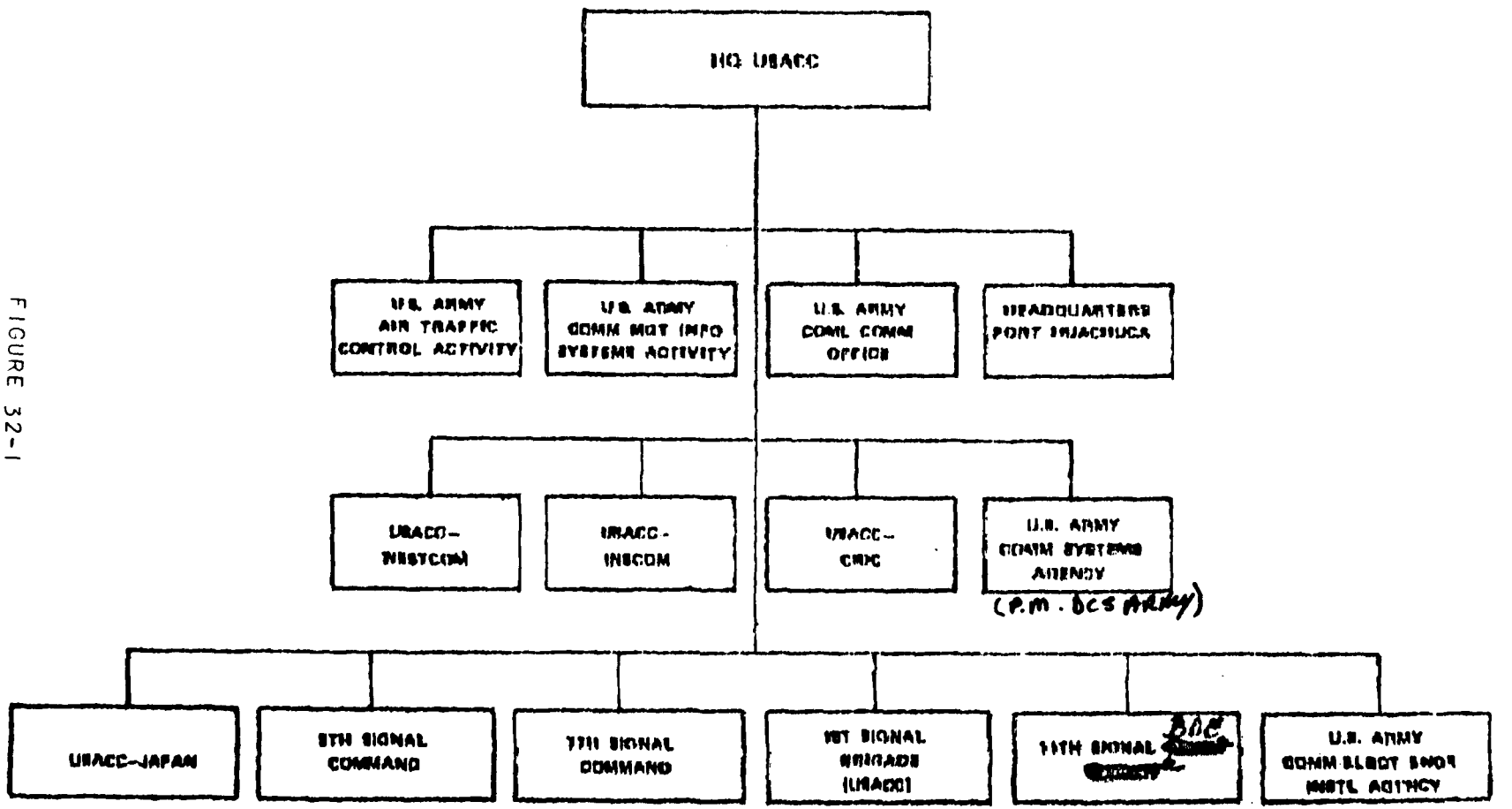
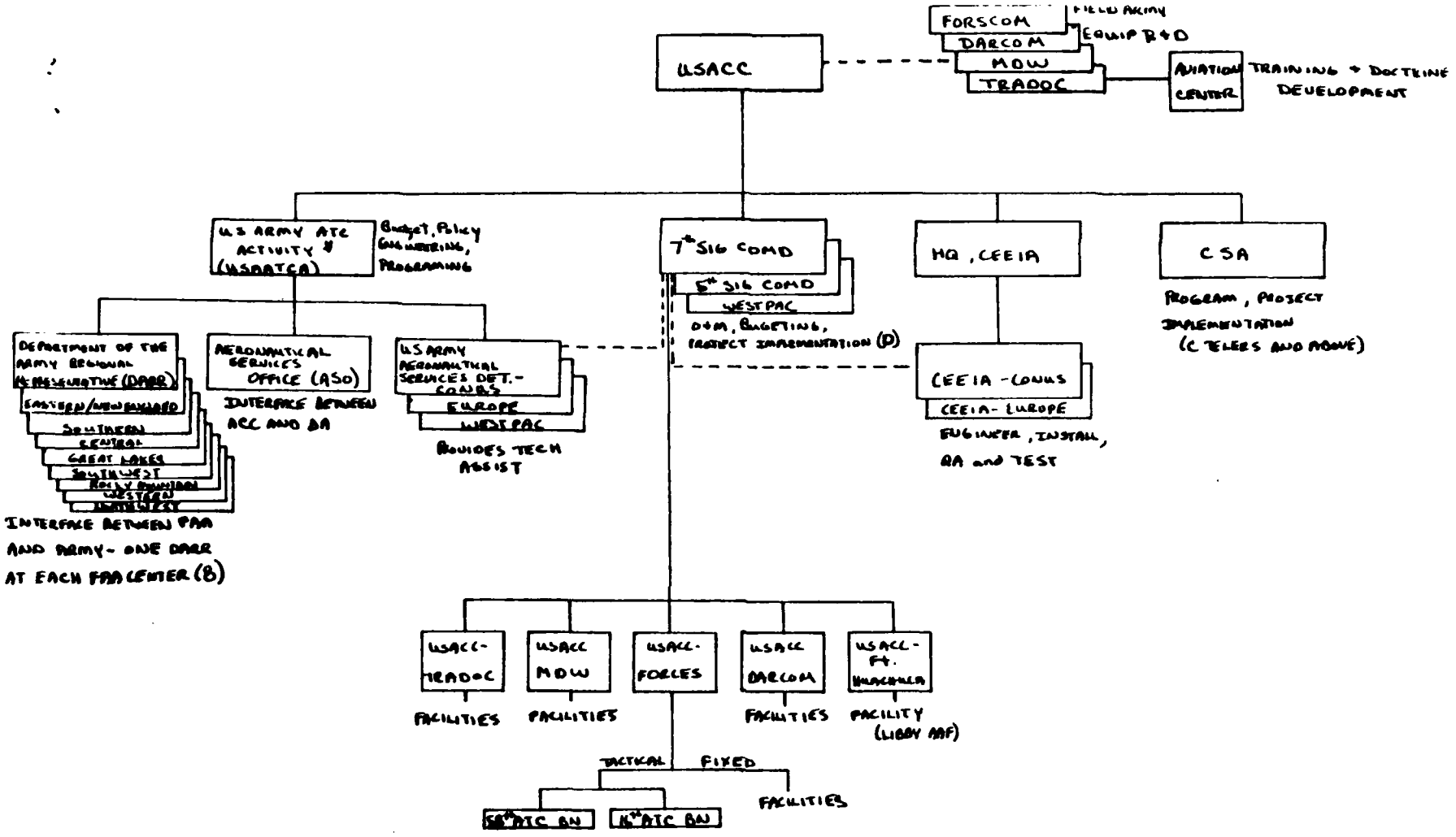


FIGURE 32-1
32-3

DAT 18 JUNE 1979
PRE D BY: ORGANIZATION AND AUTHORIZATION DIV N,
ACCFR FOR FORCE DEVELOPMENT

EUGENE J. VITETTA
COLONEL, GS
CHIEF OF STAFF



DUAL - ALSO SERVES AS ATC/AVIATION OFFICE

FIGURE 32-2 32-4

- USACC-DARCOM
- USACC-TRADOC
- USACC-FORCES COMMAND
- USACC-Health Services Command
- USACC-Military District of Washington
- USACC-USAREC

In addition, the USACC Operations Command, a subordinate of the 7th Signal Command provides communications services for the Pentagon, US Military Academy, Carlisle Barracks and all Army assigned portions of the DCS in CONUS.

The Commander of each of the intermediate commands is "dual-hatted" as the Deputy Chief of Staff Communication-Electronics or as the Director Communications Electronics of the associated Major Army Command Staff.

USACC also has two subordinate agencies providing communications engineering services and systems acquisition actions for command activities. They are the Communications-Electronics Engineering Installation (USACEEIA) Agency providing system engineering installation test and acceptance services; and, the **Communications Systems Agency** (USACSA) providing major system acquisition. The Commander, USACSA is the chartered Project Manager DCS Army and fixed systems, and works closely in concert with DARCOM.

A support unit of USACC is permanently assigned to USACSC in order to ensure that ADP systems planning includes identification of requirements for Communications/Electronics support. This organization is included in the AR 18-1 review process.

The USACC dual hat concept includes Army activities down to post, camp and station level Army-wide. Many benefits have been derived since inception of the structure. Prior to 1972, Army post, camp and station C-E efforts were totally decentralized. There were no overall resource tracking mechanisms, no standard defensible organizations and no procedures insuring economies of scale, interoperability or standarization. The present organizational structure has changed this. There have been significant cost savings, cost avoidances and personnel resource advantages. Centralized C-E planning and execution along with the recognized resource savings have resulted in quantifiable savings to the Army.

The Air Traffic Control (ATC) responsibility, both non-tactical and tactical, assigned to USACC is administered through essentially the same command lines as the communications structure as depicted in Figure 32-3. The USACC geographic subordinate commands excercise system operations and maintenance functions; the US Army ATC Activity (USAATCA) a USACC Field Operating Agency, provides overall budgetarty programming, policy, systems engineering and interface and coordination with the Federal Aviation Agency; CEEIA provides application engineering, installation, test and acceptance of new systems; and USACSA provides acquisition services as an additional role of Project Manager in collaboration with DARCOM.

New Equipment Research and development, when needed, is accomplished in coordination with DARCOM. Individual personnel training and doctrine definition is accomplished in coordination with TRADOC through the US Army Aviation Center and School at Fort Rucker, Alabama. USACC geographic sub-commands exercise management in coordination with the communications and the aviation offices of the MACOMS with which they are associated and colocated; except for the 7th Signal Command area (CONUS), where it's subordinate command structure is associated with several MACOM's. In addition, operation of the tactical ATC facilities is accomplished through USACC TOE units assigned to Forces Command, USAREUR, EUSA, USARJ and WESTCOM.

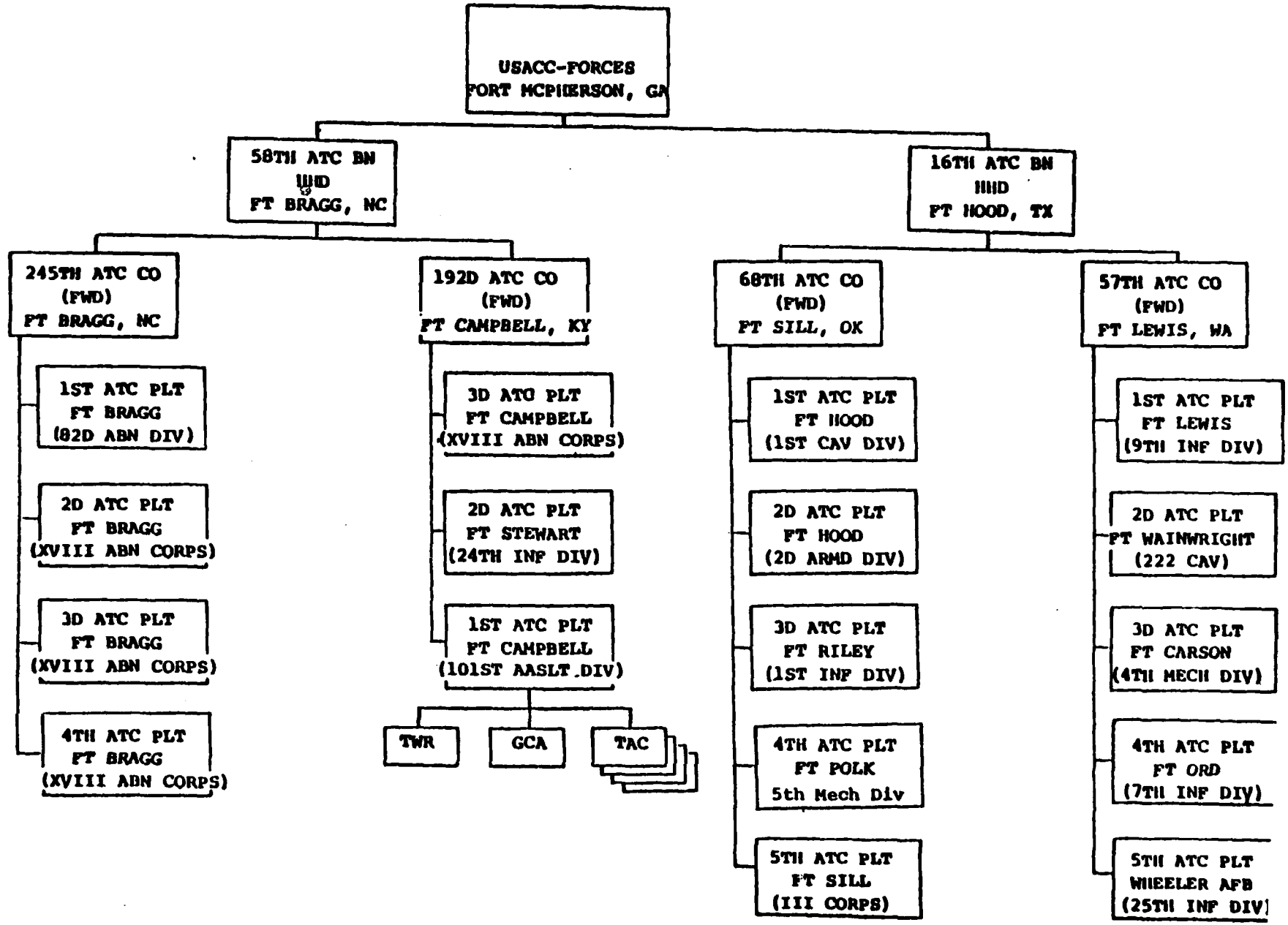

USACC-FORCES
FORT MCPHERSON, GA
58TH ATC BN
HHD
FT BRAGG, NC
16TH ATC BN
HHD
FT HOOD, TX
245TH ATC CO
(FWD)
FT BRAGG, NC
192D ATC CO
(FWD)
FT CAMPBELL, KY
68TH ATC CO
(FWD)
FT SILL, OK
57TH ATC CO
(FWD)
FT LEWIS, WA
1ST ATC PLT
FT BRAGG
(82D ABN DIV)
2D ATC PLT
FT BRAGG
(XVIII ABN CORPS)
3D ATC PLT
FT BRAGG
(XVIII ABN CORPS)
4TH ATC PLT
FT BRAGG
(XVIII ABN CORPS)
3D ATC PLT
FT CAMPBELL
(XVIII ABN CORPS)
2D ATC PLT
FT STEWART
(24TH INF DIV)
1ST ATC PLT
FT CAMPBELL
(101ST AASLT DIV)
TWR
GCA
TAC
1ST ATC PLT
FT HOOD
(1ST CAV DIV)
2D ATC PLT
FT HOOD
(2D ARMD DIV)
3D ATC PLT
FT RILEY
(1ST INF DIV)
4TH ATC PLT
FT POLK
5th Mech Div
5TH ATC PLT
FT SILL
(III CORPS)
1ST ATC PLT
FT LEWIS
(9TH INF DIV)
2D ATC PLT
FT WAINWRIGHT
(222 CAV)
3D ATC PLT
FT CARSON
(4TH MECH DIV)
4TH ATC PLT
FT ORD
(7TH INF DIV)
5TH ATC PLT
WHEELER AFB
(25TH INF DIV)

FIGURE 32-3

C-E REQUIREMENTS PROCESSING. An overview of the major stages/events/ actions in the life-cycle of C-E requirement for new facilities for increasing the capabilities of existing facilities is depicted in Figure 32-4. This overall system covers C-E requirements from inception to operation, and is characterized by innovations in planning, prioritization of requirements, staff supervisory techniques, and project staff management, all of which are addressed herein. These innovations are aimed at a total system that is more time responsive than in the past and which will provide total planning visiblity, identify and accomplish categorized requirements in their true order of priority world-wide, enhance resource management, effectively strengthen Army C-E posture, facilitate appropriation audit trails, and provide all participants with near real time project management information.

Sources of C-E requirements. The sources of C-E requirements are also the sources of information on objectives, priorities, buidance and to a certain extent, resources. As a major Army command reporting to the Chief of Staff, USACC supports and works closely with the OSD, JCS, CINC's DCA, DA MACOM's and the other services. There is probably not another Army command that is in such close contact on a regular basis with so many echelons, services and commandsin the definition and accomplishment of requirements, goals and objectives.

USACC C-E Architecture Plan. Joint staff guidance, plans and objectives of Joint and Army headquarters, concepts, philosophies and state-of-the-art outlook are blended in this network planning document and the associated Research, Development and Acquisition (RD&A) Plan. The architecture plan looks at system architecture, identification of long term requirements, priorities and omnibus requirements. Perceived requirements for new or changed communications-electronics systems based on military missions and long term plans, are addressed. Impact on areas, commands, installations and systems is an important consideration, as well as projected resource limitations. Uniform and compatible guidance on systems design is developed. The architecture plan is expected to significantly impact installation five-year C-E plans. Prioritization, categorization and integration form a significant triad.

USACC Reserach, Development, and Acquisition (RD&A) Plan. The RD&A plan meshes with the USACC Architecture Plan and provides two essential elements for USACC equipment acquisition planning.

The plan provides command doctrine and policies presented in relationship to the threat, operational and organizational concepts, and changes anticipated in technology and in the environment in which the equipment will be used.

The plan provides individual combat developed information concerning equipment acquisition actions. This information will be provided in product improvement, research, development, test and evaluation, non-developmental procurement, studies made within the Army Study System (AR 5-5), and testing programs.

USACC Five Year C-E Requirements Plan, Army (EAC, BASECOM) (Plan A). Constant refinement and updating of the C-E architecture plan drives the 5-year requirements plan. At this stage, the following are emphasized: (1) System architecture for Echelons Above Corps (EAC), base communications (BASECOM) and other areas of Army Communications ATV/NAVAIDS. (2) Prioritization, (3) relationship to OSD, DCA and DA plans and objectives, (4) theater and MACOM prioritization, (5) installation plans, (6) gross dollar figures (ballpark cost figure) by system and geographic area, and

OVERVIEW

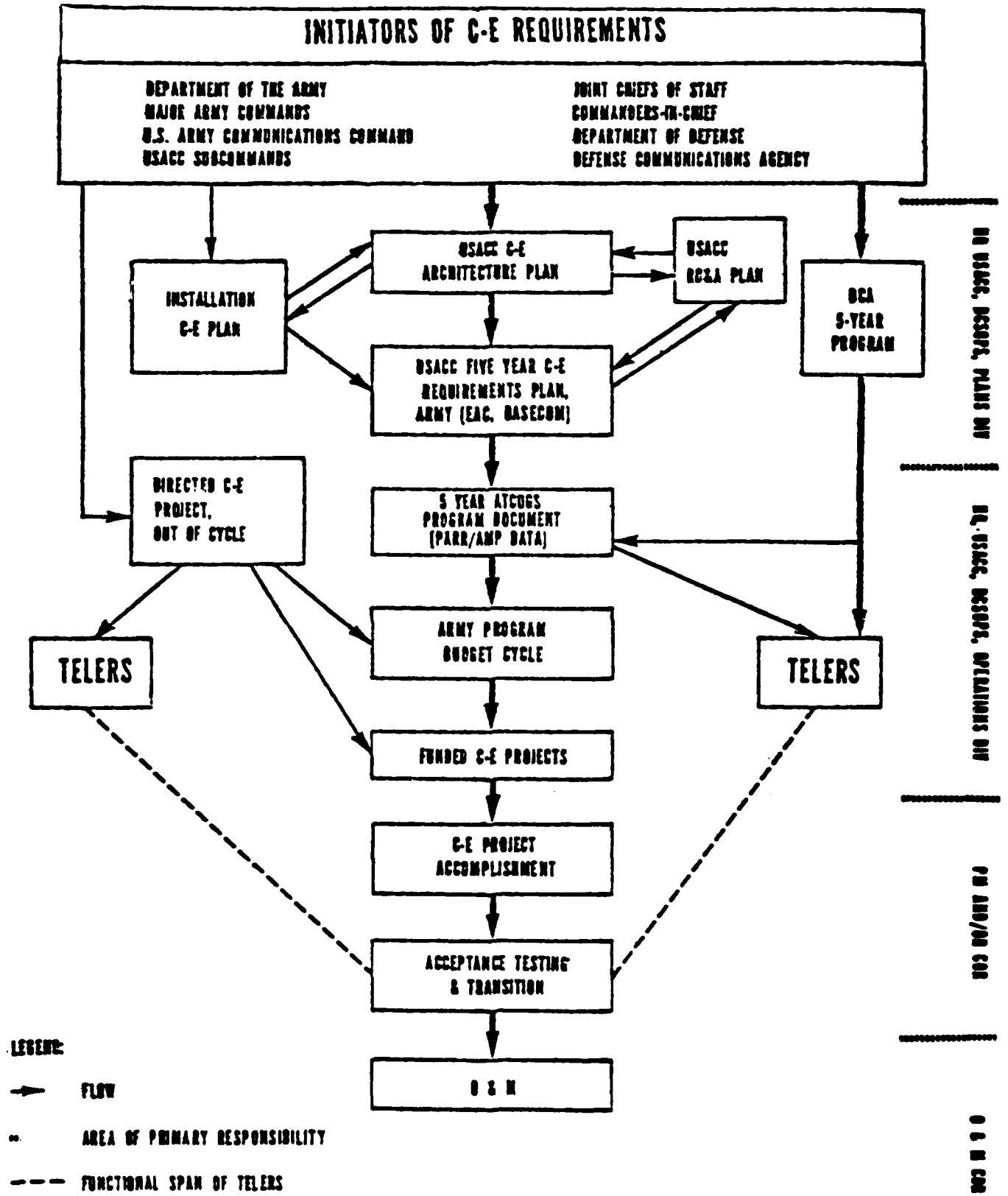


FIGURE 32-4

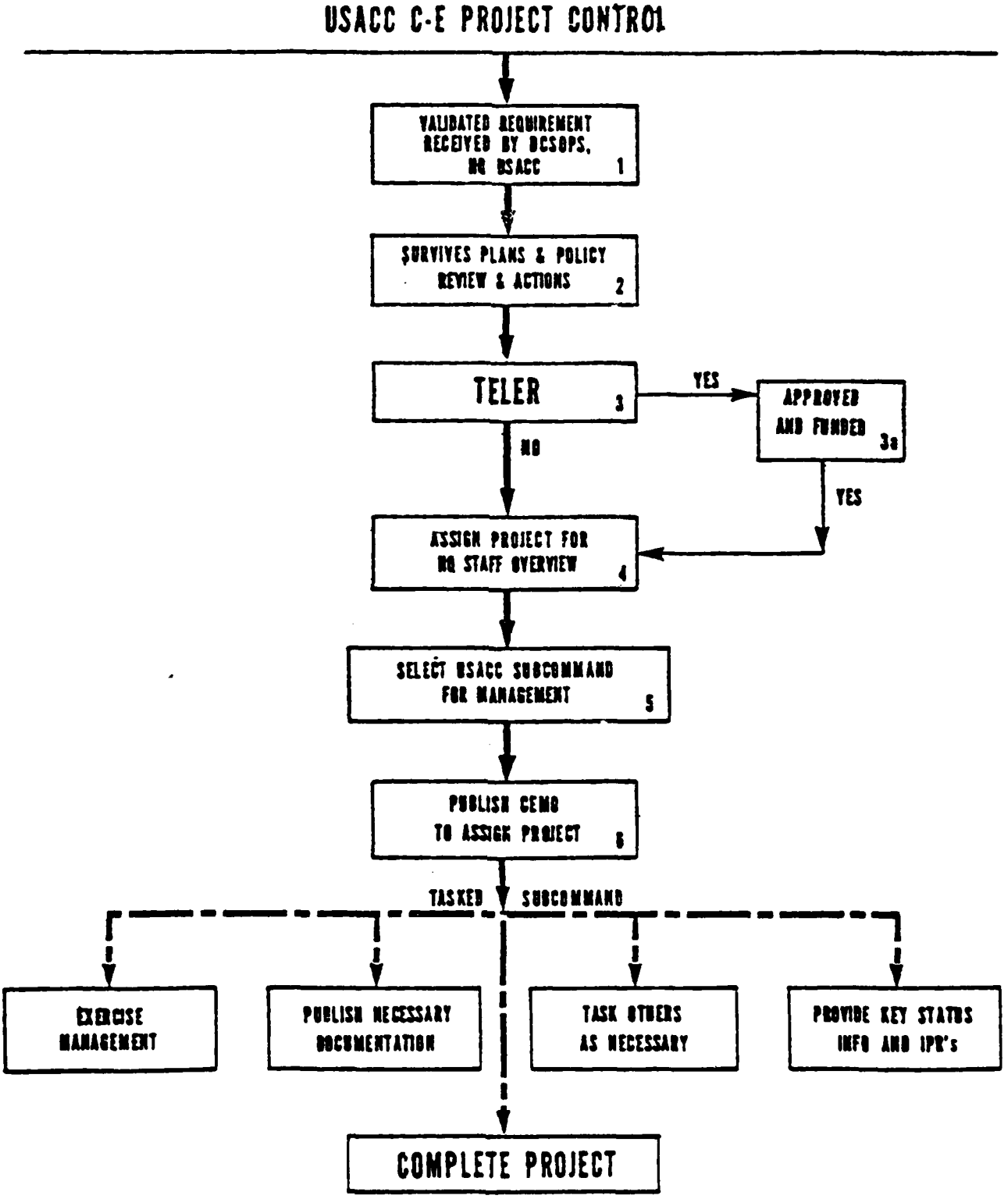

USACC C-E PROJECT CONTROL
VALIDATED REQUIREMENT RECEIVED BY DCSOPS, HQ USACC 1
SURVIVES PLANS & POLICY REVIEW & ACTIONS 2
TELER 3
YES
APPROVED AND FUNDED 3a
NO
YES
ASSIGN PROJECT FOR HQ STAFF OVERVIEW 4
SELECT USACC SUBCOMMAND FOR MANAGEMENT 5
PUBLISH CEMO TO ASSIGN PROJECT 6
TASKED SUBCOMMAND
EXERCISE MANAGEMENT
PUBLISH NECESSARY DOCUMENTATION
TASK OTHERS AS NECESSARY
PROVIDE KEY STATUS INFO AND IPR's
COMPLETE PROJECT

FIGURE 32-5

(7) threat/vulnerabilities, survivability. C-E requirements are further constained and prioritized. Directed projects are included. Requirements are assessed in the context of "will this do for the Army and USACC world-wide what we need for them to do?" This document is coordinated with the sources of C-E requirements and (as well as) HQDA. This approved plan is distributed as guidance, and responses are requested.

Five Year Army Telecommunications Combat Theater and General Support Plan (ATCOGS) (Plan B). This five year document accomplishes refinement of the data from Plan A and definitizes program funding requirements. This HQ USACC plan is a supporting program document that contains Program Analysis and Resource Review (PARR) and Army Materiel Plan (AMP) data, and drives the Army Program Objective Memorandum (POM) submission Justification Materiel, by year, is included. This document reflects the various constraints of resources, architecture, higher echelon plans and user priorities. Fiscal restraints for each command are expressed. The ATCOGS plan is revised annually as a "stand alone" document. Projects not funded in a previous year are either cancelled or resubmitted by the originator for evaluation, prioritizing and funding. For audit tracking purposes each ATCOGS project has a TELER number associated with the POM budget line. Detailed guidance on development of input to the ATCOGS is published by HQ USACC annually in the "ATCOGS Planning Guidance Memorandum for FY to FY.

HQDA tasks USACC and releases programmed funds for the implementation of projects. Funded projects that are to be monitored by HQ USACC are tasked by C-E Mission Order (CEMO) to a USACC subordinate command for project accomplishment. USACSA performs formal project management as assigned. Other sub-commands also perform management and implementation as assigned. Certain project of smaller scope (such as Class D TELERS), may be accomplished by the proponent (customer) as described in AR 105-22.

Acceptance testing, prior to transition is an important and critical element in completing each project. During this phase, it will be demonstrated that the total project effort (planning, engineering, installation, etc.), has been accomplished in a manner that results in a specification complete system or operational compatibility with its environment.

Transition to the USACC O&M Command is the final step in the life of the project. This occurs upon successful acceptance testing of the system/facility/equipment, availability of repair parts, skilled personnel, and established O&M procedures.

USACC C-E Project Control. This section summarizes the basic structure of USACC centralized C-E project control system. A chart of the C-E project control system is shown in Figure 32-5. The following review briefly describes the critical path, or main steps involved, starting with recept of a requirement at headquarters USACC and ending with a completed project. It reflects the centralized management benefits such as standardization, interoperability and acquisition economies.

Step 1. Received by HQ USACC. This could originated at one of many sources of requirements such as Department of Defense (DOD), Defense Communications Agency (DCA), Department of the Army (DA), Major Army Commands (MACOM), USACC or USACC sub-commands. Requirements are reviewed for conformance with policy, network architecture, priority and resources guidance that has previously been established.

Step 2. Those projects that are found to be justifiable in the context of applicable constraints and priorites are validated from the Policy and Plans standpoint and are identified in the appropriate plans.

Step 3. TELER numbers are assigned and listed in the ATCOGS plan for each project to be funded during the ATCOGS target year only. Telecommunications Requirements (TELER), DA Form 3070R, for a target year, and finalized by the proponent after

the ATCOGS is published. The USACC sub-commands are directed to prepare detailed TELER documents which cover comprehensive requirements and activities. TELERS are specific on priorities and milestones.

Step 4. Based on the scope of the project. USACC or another USACC sub-command is determined to be the appropriate element to exercise project management. All major projects are assigned to USACSA as project manager.

Step 5. Tasking is accomplished by communications electronics mission order (CEMO). The CEMO prescribes project management (or implementation) and control requirements and is compatible with the capabilities of the tasked sub-command. Major milestones and requirements for reports and in process reviews, among other things, are included. CEMOs are used by the managing sub-command to formalize further taskings.

Information Exchange Network. To facilitate and support improved staff and operating management of C-E projects in USACC, the Army/USACC Project/TELER ADP System functions as an information exchange network. A near real time data base capability reflects budget changes over a three year cycle to assist the management process. The network provides dynamic data which corresponds to the level and type of management occurring at the various organizations throughout the network. See Figure 32-6.

Planning and Programming for Acquisition of Telecommunications Requirements. This section pertains to the acquisition of C-E facilities and modification to existing C-E systems for which USACC is responsible. Syb-system/project plans, management engineering plans and implementation/installation plans are described.

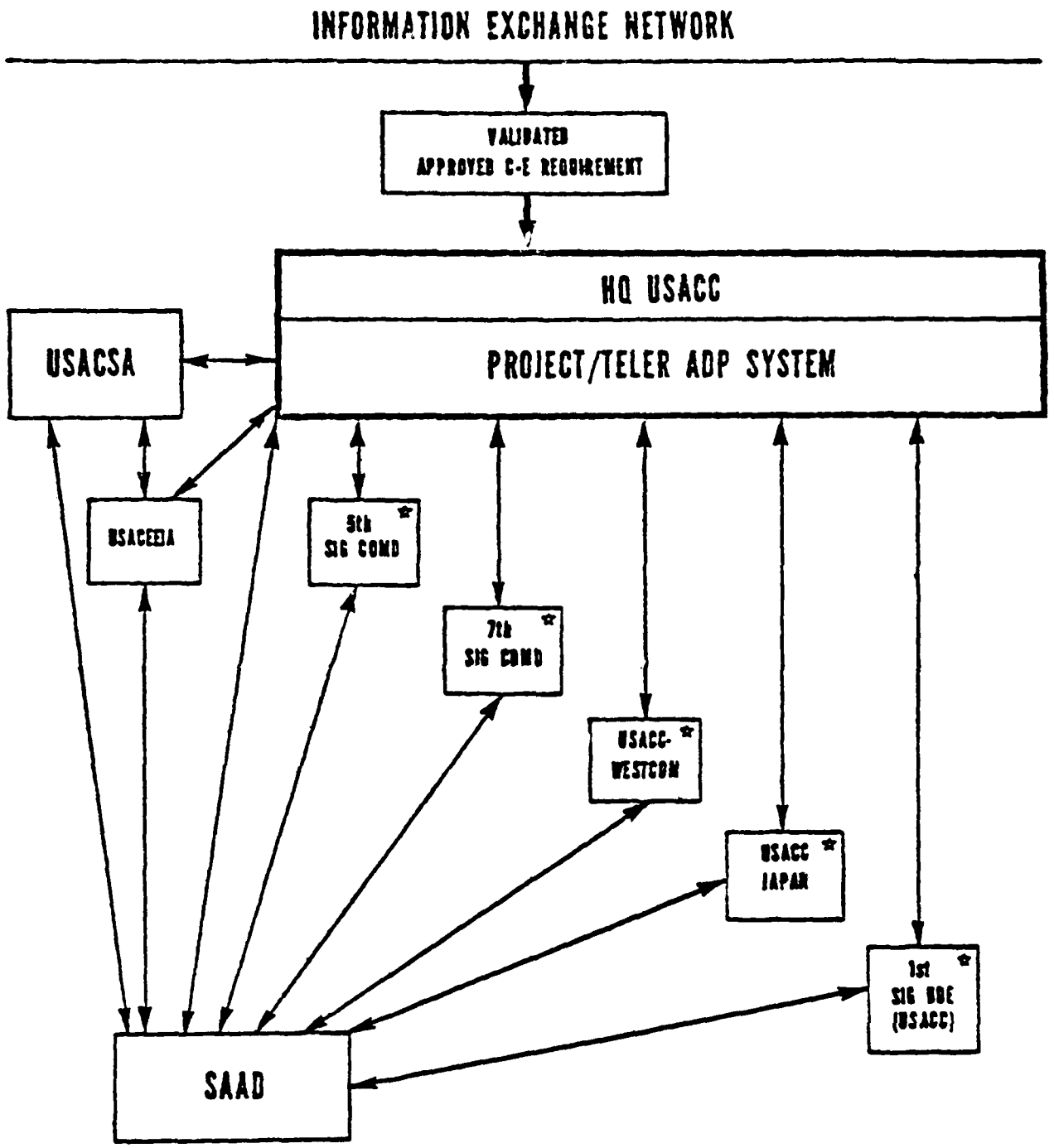
a. Major elements of the DOD involved in the planning and processing of C-E requirements/projects are USACC, other major Army commands, HQDA, DCA, Joint Chiefs of Staff, Commanders in Chief, Army Component Commanders, and the Office Secretary of Defense. A telecommunications requirement can be initiated at any of these levels.

b. The USACC C-E **Architecture Plan, USACC Five Year C-E Requirements Plan** Army (EAC, BASECOM), and the DCS Five Year Plan (DCS-FYP) discussed in previous sections are the basic requirements documents for USACC supported C-E equipment and systems.

c. The formal Telecommunications Requirement (TELER), DA Form 3070R, is the basic document from the proponent or the user containing the refined basis for programming and budgeting justification for non-tactical telecommunications services, facilities, systems, equipment engineering and technical assistance (AR 105-22).

Subsystem/project plan. The subsystem/project plan (S/PP) is required by OSD Directive 4630.1 and AR 105-22 to support and justify major TELERS to OSD for approval and funding support. The dollar threshold levels which constitute major TELERS are those over $500,000 in capital costs or over $200,000 in annual lease costs. In certain cases, S/PP are required for lesser projects.

Management Engineering Plans (MEP). MEP are the primary management tools for defining, controlling, and implementing telecommunications proejcts, tasks and activities that are managed by DOD components. MEP are management oriented and are used as road maps to portray the tasks necessary to complete sub-systems or projects. These tasks are logically arranged to insure orderly and



* LOCAL SYSTEM

FIGURE 32-6

efficient implementation. Detailed engineering of the sub-system or proejct is defined in the Implementation/Installation Plan (IIP). The MEP is the guidance CEMO tasking.

The DCA Charter, DOD Directive 5105.19, provides that the Secretaries of the MILDEPS shall be responsible for developing or participating in the development of MEP for the DCS. USACC performs these functions for the Army. Coordination among representatives of USACC, USACSA, US Army Communications-Electronics Engineering Installation Agency (USACEEIA), DA, DCA, and other supporting elements to outline furture efforts and development of the MEP are required to develop and coordinate detailed information not contained in previous technical standards and work schedules are developed, broad scope of work is represented, and specific responsibilities are identified in this stage in the evolutionary development of plans required to implement a telecommunications system.

USACC Command C-E Priority System. The USACC command priority system is aimed at the effective utilization of available and programmed resources. The system provides guidance for the use of resources, to include personnel, material, supplies, funds, and services; provides an approach to deciding how to utilize resources; assists in forecasting future requirements; identifies potential shortages of resources; and provides data to indicate the probable impact of potential or actual shortages.

The Command C-E priority system is structured with the following identification categories (there is not relative priority implication in this listing):

(1) C-E Facilities/Projects
(2) Electromagnetic Compatibility Program (EMCP)
(3) Department of the Army Command and Control System (DACCS)
(4) Non-DCS Leases
(5) Base Communications - FORSCOM
(6) Base Communications - EUCOM
(7) Base Communications - PACOM

Agencies, other than Headquarters, USACC, which have varying degrees of responsibilities for the above phases of development include DCA, US Army Materiel Development and Readiness Command (DARCOM), USACSA, USACEEIA, US Army Air Traffic Control Agency (USAATCA), and USACC O&M commands.

Systems planning, design, engineering functions and value engineering in support of the above are distinct from, and do not conflict with, those engineering phases which properly remain the responsibility of DARCOM-R&D engineering, procurement engineering, and production engineering. USACC expertise in system planning, engineering, installation, and thinking is complemented by, and closely correlated with, expertise in procurement, maintenance engineering, and provision of materiel and supply services. The interface between these phases of engineering being performed by USACC and DARCOM is at USACSA.

Detailed consideration and description of intra- and inter-command or agency roles, relationships, and responsibilites communications command regulation (CCR 105-12) are based on the fact that DA tasks the Commander USACC and releases programmed funds for the implementation of projects as defined above.

The Commander, USACC is responsible under ARs 5-4, 10-13 70-10, 70-61, 71-2, 71-3, and 71-5 for planning, value engineering, programming and budgeting, engineering, configuration management, quality assurance, overseas contract administration, installation, combat developer and user test and evaluation, operational testing, acceptance testing and new equipment training for these projects. As the Command Program Manager, the Commander, USACC:

(1) Tasks the responsible subordinate commander for C-E project implementation.

(2) Monitors progress of projects during those phases of system life-cycle management, and conducts Headquarters staff supervision as appropriate.

Commander, DARCOM provides support to USACC and is responsible under ARs 10-11, 11-8, 70-1, 70-10, 70-37. 71-6, 700-51, and 700-70 for planning, research and development, programming and budgeting, procurement, production, production engineering, configuration management, data management, materiel developer test and evaluation, product assurance, product improvement, value engineering, distribution, type classification, and integrated logistics support for these projects and tasks.

The Commander, USACSA/Project Manager DCS (Army) Communications Systems is responsible for:

(1) Major projects:

a. Performs centralized project management, in accordance with Secretary of the Army - approved Manager Charter, CCR 10-15, and appropriate DARCOM regulations, of both USACC functions and DARCOM functions, normally through his Deputy Project Manager (DPM), from receipt of project tasking until Termination of Centralized Management (TCM).

b. Manages/directs and implements all aspects of assigned projects, from receipt of project tasking until TCM, and will, where feasible, conduct a turnkey operation. During this process, participating organization, including USACEEIA and gaining Theater Signal or user commands, will provide support as tasked by the project manager. Additionally, gaining Theater Signal or user commanders will provide interface with appropriate component and area command and activities as required or tasked.

Tasks the gaining Theater Signal or proponent command to submit TELERS when required, for property accountability.

(2) Minor Projects and Tasks:

a. Performs centralized project management of DARCOM-derivative functions in accordance with Secretary of the Army-approved Project Manager Charter, and appropriate DARCOM regulations from receipt of advice to initiate his DARCOM - derivative functions until TCM.

b. Performs centralized project managment of USACC-derivative functions in accordance with Secretary of the Army - approved PM charter and CCR 10-15 for those minor projects and tasks assigned to him. For those minor projects and tasks for which USACC-directive functions are not tasked to him, he project manages DARCOM-derivative functions and coordinates with responsible sub-command in the interest of attainment of stated objectives.

(3) All Projects and Tasks:

a. Provides the sole source of direction to DARCOM readiness commands, USACC subordinate commands and other participating organizations, as concerns DARCOM-derivative functions.

b. Provides the sole source of direction to Procuring Contracting Officers (PCO) or to any program execution activity regarding RDTE, APA, OPA, and other funded procurements identified in the Project Charter and/or in individual project tasking.

c. Is the DARCOM Integrated Materiel Inventory Manager/Inventory Control Point (ICP) B-53 for principal items peculiar to USACC and/or DARCOM assigned systems and projects, in accordance with AR 70-1.

d. The Commander, US Army Communicat ons-Electronics Engineering Installation Agency (USACEEIA) re responsible for accomplishment of the following for projects and tasks assigned:

1. Support of the Project Manager, as tasked.

2. Performance of systems and detail engineering, including software, after coordination with the gaining O&M command as to acceptability of the project or task from the O&M standpoint.

3. Installation and testing.

4. Quality assurance to include on-site acceptance testing and coordination with the gaining command to insure that the installed system/facility/equipment is specification complete.

USACC O&M commanders are responsible for:

(1) Reviewing and coordinating the C-E Engineering Installation Plan and the Acceptance Test Plan.

(2) Participating in major projects as tasked by CEMO in support of Project Manager

(3) Management/implementation of approved and funded minor projects and tasks within their respective areas, as assigned, in conjunction with Commander, USACSA, who project manages the DARCOM-derivative functions.

(4) Insuring that TELERS are submitted for all non-tactical telecommunications services and facilities except those excluded by AR 105-22.

(5) O&M of DCS and non-DCS Army systems, sub-systems, and facilities or equipment to include ATC/NACAIDS in their respective areas after project transition.

(6) Managment and performance of contract administration overseas on minor projects, as detailed in CCP 715-1. The O&M commander may be tasked by CEMO to perform engineering, installation, test, and acceptance on minor projects or C-E tasks in their respective areas.

The USACC Procurement/Contract Administration Office Overseas (PCSOO) will perform the oversea contract administration for major projects which are project managed by the Commander USACSA.

RESOURCE MANAGEMENT

INTRODUCTION: Resource Management is inherent to all elements of the USACC mission and probably is the most ciritcal of all actions in support of the mission. The following information emphasizes the management philosophy within the OPA, APA, and OMA appropriations and the management of resources obtained through these appropriations.

OTHER PROCUREMENT, ARMY AND AIRCRAFT PROCUREMENT, ARMY MANAGEMENT.

The DCSOPS, USACC manages the programming, budgeting and execution of USACC appointed OPA funds. Within the Army, OPA funds are controlled by Deputy Chief of Staff, Research, Development, and Acquisition AR 37-100-(FY), the Army Management Structure, describes the types of communications-electronics requirements that can be satisfied through the expenditure of OPA funds under budget program code 5200. These types are the procurement, manufacture, value engineering, reconfiguration, installation, and test and check-out of C-E equipment and related items such as antenna towers, equipment shelters, and ancillary equipment. OPA funds also may provide for contractual services such as engineering, installation, and documentation associated with C-E equipment when procured under a single engineer, furnish, and install (EF&I) "turnkey" contract. Excluded from OPA funding are leases, training, and contractual services not associated with procurement of C-E equipment all of which would be funded in the Operations and Maintenance-Army (OMA) appropriation. Initial repair parts are procured within the DARCOM OPA secondary appropriation. Construction to support the installation of fixed C-E systems is allowable with OPA funds in accordance with AR 37-100-(FY) budget program code 5212. DA appropriated OPA funds to USACC for financial management are directed by DCSOPS through the Comptroller to USACSA.

Within the Army, APA funds are controlled by the Aviation Section, Deputy Chief of Staff for Research, Development, and Acquisition (DCSRDA). AR 37-100-(FY) provides the the procurement of ATC/navigational aids (NAVAID) equipment and systems under budget program code 1400, Support Equipment and Facilities. The types of ATC/NAVAID requirements that can be satisfied through the expenditure of APA funds are essentially the same as outlined for OPA funds in the sub-paragraph a, above, with the exception of construction and other exceptions noted for OPA.

OMA PROGRAM MANAGEMENT. This section outlines the OMA Program and the associated budgeting.

The OMA Program is a integral part of the DOD Five-Year Defense Program (FYDP) which is composed of ten subprograms. USACC receives OMA funds for many subprograms.

The majority of USACC OMA funding is received in Program 3, (intelligence & communications which is further subdivided into sub-programs and program elements (PE). These PE's identify resources for portions of the program for management, programming and budgeting purprses.

Major communications systems and requirements are developed through DCA planning for DCS or through USACC subsystems or project plans for non-DCS. This ACC is involved with DCS planning through input to these plans. The programming of resources from OMA appropriations required to support this planning are developed through close coordination between representatives of DCSOPS, Comptroller, and the DA staff.

LEASED COMMUNICATIONS MANAGEMENT. AR 10-13, provides for central direction and coordination of leased communications for the Army by the United States Army Communications Command. The Commander, USACC has responsibility for this mission together with a second to plan, program for, and support missions, functions, and responsibilities. The management of Army's world-wide leased communications resources, as identified in AR 105-22, is of major significance. To effectively manage these resources, the US Army Commercial Communications Office (USARCCO) was established by USACC to consolidate and centralize the long haul leased communications responsibilities.

(1) USARCCO is the Army's TCO and, as such, is the activity which certifies to DCA that a specified telecommunications service or facility is a bona fide requirement of USACC and DA and will be funded. The TCO is:

a. Responsible for the coordination, processing, and evaluation of assigned telecommunications requirements for long haul leased services and facilities.

b. The Army's point of contact between the major Army elements and agencies and the Defense Commercial Communications Office (DECCO) located at Scott AFB, IL, and its field activities; DECCO-PAC, Honolulu, HI; and DECCO-EUR, at Sembach AFB, Germany. These are the DOD activities responsible for the procurement and contractual administration of long haul DCS and non-DCS leased communications services, facilities, and associated equipment.

BASECOM is comprised of those telecommunications services that are used within the confines of an Army installation of DA activity. Management of BASECOM services is the responsibility of the USACC O&M commanders within their assigned geographic areas. Leased BASECOM consists of those services acquired in supprrt of local poast and base requirements (for example, central office trunks, TELEX, TWX, WATS, and facsimile circuitry) for which the carrier or vendor charges at a flat rate, or charges circuit mileage costs at 1/4-mile increments. BASECOM services include Federal Telecommunications Systems (FTS) which is GSA government leased system of communications networks. FTS provides telephone communications service through the Inter-City Voice Network (IVN), FTS Local Service and extended area service. USARCCO has been tasked with the management responsibility of the Army's portion of the FTS, and the approval, but not disapproval authority.

BASECOM services, with the exception of facsimile and FTS, are normally leased locally in accordance with AR 105-23. However, facsimile and FTS services are leased centrally for management control purposes, and are obtained under the provisions of AR 105-22.

The USACC VE Program is intended to insure that expenditures for equipment, systems, operations, and maintenance are the lowest possible which still achieve the required function and accomplish the mission. To insure accomplishment of VE, adequate funds will be budgeted and identified in accordance with DODI 7110.2 and command guidance.

USACC National Research, Development and Acquisition Rates. The Commander, USACC, as a combat developer and operational tester, is responsible for establishing materiel development objectives and requirements and for conducting operational tests and evaluation of communications equipment developed for use in the Defense Communications Systems (DCS) (Army); post, camp, station, communications; air traffic control systems; and other communications, as specifically designated by HQDA. In particular, USACC, in coordination with TRADOC, is responsible for all aspects of combat development of communications in Echelons Above Corps. Commander, USACC

monitors RDT&E planned and conducted by other military departments and COMSEC RDT&E by the NATIONAL Security Agency, potential for NATO standardizations and recommends to HQDA those projects which have potential application to USACC requirement. As directed by HQDA, Commander, USACC is responsible for the overall design of communications systems which have sole application to the DCS or other assigned Army communications systems.

In the materiel development and acquisition process, DARCOM serves as the principal Army Materiel Developer. USACC coordinates, as a combat developer, materiel requirements directly with HQ, DARCOM. During program procurement and deployment this relationship allows USACC to act as a materiel developer. During research and development, USACC acts as the combat developer, while USACSA fulfills the materiel developer role for DARCOM. RDT&E program approvals and funding is reserved for HQ DARCOM. Type classification, COIP, QOPRI, funding validation, ILS and similar actions are performed by the DARCOM offices of responsibility.

Negotiations are in progress to establish Lead Military Department assignments in support of DCA in various equipment and system functional ares.

USACC provides recommendations and participates in design and architectural decisions concerning the DCS networks. In addition, USACC performs studies and investigations to meet the changing missions or to provide improvements to the DCS facilities and networks. USACC provides HQDA representation to DCS RDT&E planning process and takes action to initiate RDT&E development programs that are assigned to the Army. An important point of management, which is often misunderstood, is that DCS planning, architectual design and Lead Military Department functions are tri-service responsibilities and are governed by DOD, JCS, and DCS regulations and authority. The actual development of equipment is a task to Army and is performed in accordance with Army regulation.

When USACC missions require the development of tactical equipment, as in the EAC or contingency missions, the requirement must be coordinated with TRADOC. USACC does not burden the field Army with unique equipment. USACC is responsible to monitor field communications equipment requirements and develops to insure compatibility and usefulness to our missions.

USACC has other development requirments which are assigned to Program Managers other than USACSA. For instance: calibration vans and equipments - MIRADCOM; Power above 500 watts - PM Engineers: Air Traffic Control - PM NAVCOM.

Information Sheet

SUBJECT: Army Command and Control Master Plan (AC MP)

PURPOSE: To provide background information and the status of on-going actions for the subject plan.

SCOPE: The AC MP was developed to provide a uniform understanding of total command control system requirements and to establish an integrated program plan for the development of command and control capabilities. The plan serves as the guidance/mechanism for all Army Command and Control System developments. The scope of AC MP is to be expanded to include Combat Service Support (CSS) tactical and EAC, the involved automation/ communications command center facilities and Air Defense.

OBJECTIVES: The ultimate objective of the AC MP effort is to provide the Army a plan for the management of developments in the command and control arena.

BACKGROUND:

DCSOPS, HQDA, in May 1976, initiated the AC MP in order to develop a cohesive plan for future command control developments (doctrine, organization and material). A 1985 baseline was used.

The plan analyzed the Army's role in Crisis, Conventional War, Theater Nuclear War and Post Attack/Reconstitution (General Nuclear War) in different scenarios, Determined command control requirements, assessed ability of Army command control to meet needs, documented shortfalls and developed a series of alternatives for each level of conflict to overcome deficiencies. From the alternatives, a composite set of recommended improvements to Army C were included within the AC MP. The plan was approved for guidance by the Army Command and Control Council in July 1979 and distributed in Sep 1979.

METHODOLOGY: The command and control requirements were derived from an examination of Army command nodes operating in various scenarios selected or established to highlight the command and control functions of the headquarters. The requirements were established in five categories or systems elements: Intelligence, Surveillance, and Target Acquisition (ISTA); Data Collection and Processing (DC&P); Communications; Facilities; and Command Aids. The derived requirements were matched against projected Army capabilities in the 1985 time frame and deficient areas identified. In order to provide a range of options to the decision maker, a series of architectures was devised: each of which offered a balanced command and control capability through differing arrangements of assets. Architectures ranged in capability from minimal improvements to the 1985.

CURRENT AND PLANNED ACTIONS:

The draft Army Command and Control System Regulation was forwarded by DCSOPS in May 1980 to all MACOMs, Agencies and DA Staff elements. It is to be used as interim guidance until formally published by DA.

CACDA is currently updating AC^2MP. Suspense DA is 1QFY81. Scenarios, threat, baseline and requirements are all being revised.

DARCOM will develop supporting engineering specifications based on TRADOC input.

ARMY BATTLEFIELD INTERFACE CONCEPT (ABIC)

TRADOC PROPONENT - CACDA

PURPOSE: The ABIC defines interface requirements between battlefield automated systems (BAS) and provides architectural guidance for combat and materiel developers.

SCOPE: The ABIC addresses all BAS at division and corps as well as those inter-service, NATO, national and echelons above corps (EAC) automated systems which provide information to or exchange information with Corps BAS scheduled for fielding by 1986.

BACKGROUND: In pursuit of an overall system approach to insure compatibility of emerging automated systems that support an evolving, yet more definitive battlefield automation architecture, HQDA directed the development of the ABIC. HQ, TRADOC was designated the automation architect and DARCOM the automation engineer. Framework for the battlefield automation architecture is found in the Executive/Control/subordinate systems (ECS^2) concept. Each TRADOC school and center has been tasked to develop its respective area of responsibilities for the ECS^2 concept. These will be expanded in future interactions of the ABIC.

Using the ABIC as the Army statement of the interface requirement, a Technical Interface Requirement (TIR) is developed to specify system-to-system interface data, which enable the materiel developer to provide the engineering solution to the interface requirement. The TIR serves as a bridging document between the ABIC and the materiel developers Technical Interface Design Plan (TIDP).

STATUS: ABIC is in the third iteration (ABIC 78, 79 and current 80).

INFORMATION PAPER

DAAC-PE

SUBJECT: Elements of Analysis, SAACFAAC

1. The Study Directive (HQDA Letter 5-79-9) established eight (8) Essential Elements of Analysis. While the primary emphasis of the Study Group centered on the Automation/Communications baseline and the problem definition, the Study Group also briefly looked at the Essential Elements of Analysis for major advantages and disadvantages connected with each.

2. The Study Group felt the Essential Element of Analysis could not be addressed in isolation and thus, first analyzed the baseline and major problems. The baseline identification and problem causes/impacts were then used as background against which to base a determination of the key issues surrounding the questions raised in the Essential Elements of Analysis.

3. The questions raised by the Essential Elements of Analysis are primarily organizational in nature and not necessarily problems unto themselves. The questions raised by the Essential Elements of Analysis are not all inclusive. They may be a problem or parts of greater problems. Below are the evaluations of the Essential Elements of Analysis in terms of how they are affected by the baseline and problem definition.

4. Essential Elements of Analysis 1 and 2.

- How should the Army align automation and communications resources, functions, and responsibilities?

- Can efficiencies be obtained by better statement and enforcement of policy while maintaining the status quo organizationally?

5. The answers to the above questions represent solutions. Specific misalignments, inefficiencies in statement of policy, and lack of enforcement of policy are addressed in appropriate elements of the problem definitions as drawn from the baseline and expressed in the baseline; problem causes, problem impacts, and problem rationale statement. In terms of functions and responsibilities the problem definition generally reinforces the need for an ACSAC or some form of central management of Automation/Communications at HQDA level. Any exact organizational structure to support the management of automation/communications would follow resolution of the problems, particularly those problems involving goals, policy and planning. Those problems unresolvable through better statement, understanding, and acceptance of goals, policy, and plans would be indications of less than optimal alignment. Recommendations of any specific overall alignments will be addressed in a follow-on solution phase of this study.

6. Essential Element of Analysis 3.

- Should USACSC be combined with DARCOM?

- Should USACSC be combined with DARCOM?

ADVANTAGES:

+ Provides an increased centralization of materiel developers and software development for non-tactical automation, STAMMIS functional applications and MIS functional applications.

+ Consolidates hardware and software development in the logistics, RDA, and OMA areas and communities.

+ A potential exists for savings of overhead and cross-leveling of resources to meeting changing priorities.

+ A potential exists to improve efficiency.

DISADVANTAGES:

- Army proponents and agencies would be required to deal with a MACOM whose primary mission is not directed solely to support Automation/ Communications. From a parochial view the USACSC mission is viewed as oriented directly to support Army computer resources which DARCOM's parochial outlook views a broader and different world.

- Other MACOMs may not accept the realignment of CSC with DARCOM.

- Potential exists for CSC and Army automation priorities to become subordinate to DARCOM priorities.

- Potential exists to further remove the user from the developer by layering the command and administrative structure which processes functional requirements.

- Increases DARCOM span of control and makes DARCOM a major force in a major RDA and OMA area outside the battlefield.

- Not supportive of the A/C Network by removing CSC from the A/C management structure.

7. Essential Element of Analysis 4.

- Should USACSC be combined with UCACC?

NOTE: Extremely little benefit exists in combining CSC with ACC unless BASEOPS and possible other selected DPI's are placed under the command and control of the new combined organization. The advantages and disadvantages presuppose stovepiping seleced DPI's to the new command.

ADVANTAGES:

+ Enhances the concept of the A/C Network and provides a framework for the A/C Network to grow properly.

+ PPBS consolidation of A/C programs.

+ Potential cost savings exist in the years following realignment from elimination of duplication and consolidation of effort.

+ Provides an A/C architect and systems engineer.

+ Provides A/C integration in and thru a single command.

+ Potential for more efficient/effective resource utilization through load leveling, standard operating procedures, established standards, etc.

+ Would demonstrate validity/invalidity of A/C network concept.

+ Improve planning for non-tactical common user A/C world.

+ Provide policy articulation and enforcement for non-tacical common user A/C world.

+ More responsive to high priority user needs.

+ Potential to provide greater connection between peacetime, wartime, and mobilization requirements.

+ Clear identifiability of A/C network goals and objectives with clear indication of assets to support the A/C network.

DISADVANTAGES:

- MACOM's perceive loss of control of ADP resources.

- Short term inefficiencies due to reorganization and realignment.

- Perception of absorption of automation by communications.

- Philosophical and occupational differences between automation and communications.

8. Essential Element of Analysis 5.

- Should USACSC be given command and/or direct technical control of selected DPI's.

ADVANTAGES:

+ Potential exists to streamline operations for more efficient/effective use of resources.

+ In the outyears costs-savings occur from elimination of duplication and consolidation of effort.

+ Demonstrates the validity of the A/C Network concept and provides critique of concept.

+ Planning would be improved through central control of plans.

+ Provide policy articulation and enforcement for non-tactical BASOPS community.

+ Provide factual data on the validity or non-validity of the benefits of centralized control of DPI operations.

+ Provides a clear channel dissemination of goals and objectives with a high visibility through one focal point.

DISADVANTAGES:

- MACOM s will perceive loss of control.

- Potential short term inefficiencies due to initial impact of reorganization.

- No overhead savings.

9. Essential Element of Analysis 6.

- Should the data processing assets in DARCOM be combined with USACSC and/or USACC?

NOTE: The Data Proessing assets of DARCOM are considered to be:

-- Fixed system software application personnel.

-- DPI operations for Commodity Command Standard Systems (CCSS).

— Proposed PDSS personnel.

For the purpose of the above question the assets in DARCOM considered to be combined with other commands were the fixed systems software applications personnel.

Essential Element of Analysis 6a.

- With USACSC?

ADVANTAGES:

+ Potential cost savings over time.

+ Potential for more efficient/effective use of resources.

+ Provides a start towards a single management agency for non-tactical MIS.

+ Provides a single planning agency for an increased number of Army MIS functions.

+ Provides policy articulation and enforcement for non-tactical automation community.

DISADVANTAGES:

- Potential for a reduction in automation support for DARCOM.

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- Does not extend the A/C network integration concept to the entire A/C world.

- Not acceptable to DARCOM.

Essential Element of Analysis 6b.

- With USACC?

ADVANTAGES: None identified.

DISADVANTAGES:

- Enhances no known goals.

- Would increase the current problem of fragmented management in Automation.

- Contains the disadvantages and description of reorganization without providing any identified advantages.

10. Essential Element of Analysis 7.

- Should the Project Manager for Tactical Management Information Systems (PM TACMIS) office and other Project Management Offices in USACSC be transferred to DARCOM?

Essential Element of Analysis 7a.

- PM TACMIS to DARCOM?

ADVANTAGES:

+ Places all tactical automation under a single command (e.g., TRADOC deals with one Materiel Developer).

+ Potential for a smoother transition to the ILS.

+ Provides central planning agency for integration of battlefield systems.

+ Potential for improved integration of A/C on battlefield.

DISADVANTAGES:

- Potential for increasing the already unacceptable development time for tactical automation systems.

- Creates a software development problem from alleviation of a hardware problem. (CSC developed vs DARCOM developed).

Essential Element of Analysis 7b.

- Other Project Management Offices in USACC to be transferred to DARCOM?

ADVANTAGES:

+ Lessens fragmentation of PM Management.

DISADVANTAGES:

- Army proponents and agencies would be required to deal with a MACOM whose primary mission is not directly solely to support Automation/ Communications. From a parochial viewpoint automation personnel can relate better to a command viewed as a common user oriented directly to computer resources whereas DARCOM s outlook views a broader and different world.

- Not acceptable to other MACOMs.

- Potential for automation priorities to become subordinate to DARCOM priorities.

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